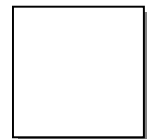


Specification for

New Construction

River Loop Crossing Trailhead

Houlton, Wisconsin



December 2017

michael huber architects

**SECTION 00 0101
PROJECT TITLE PAGE**

PROJECT MANUAL

**NEW CONSTRUCTION FOR
RIVER LOOP CROSSING TRAILHEAD
77 HOULTON SCHOOL CIRCLE
HOULTON, WISCONSIN 54082**

ARCHITECT'S PROJECT NUMBER: 17-07.0

OWNER:

**ST. CROIX COUNTY
GOVERNMENT CENTER
1101 CARMICHAEL ROAD
HUDSON, WISCONSIN 54016**

ARCHITECT:

**MICHAEL HUBER ARCHITECTS, LLC
351 HIGHVIEW ROAD
HUDSON, WISCONSIN 54016**

STRUCTURAL ENGINEER:

**BUNKERS & ASSOCIATES
6687 FOREST STREET
FARMINGTON, MINNESOTA 55024**

MECHANICAL/ELECTRICAL ENGINEER:

**AUTH CONSULTING
406 TECHNOLOGY DRIVE E SUITE A
MENOMONIE, WISCONSIN 54751**

END OF SECTION

SECTION 00 0105
CERTIFICATIONS PAGE

TITLE:NEW CONSTRUCTION OF
RIVER LOOP CROSSING TRAILHEAD
79 HOULTON SCHOOL CIRCLE
HOULTON, WISCONSIN 54082

ARCHITECT:MICHAEL HUBER ARCHITECTS, LLC
351 HIGHVIEW ROAD
HUDSON, WISCONSIN 54016

I HEREBY CERTIFY THAT THIS SPECIFICATION WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED ARCHITECT UNDER THE LAWS OF THE STATE OF WISCONSIN.

_____	_____9275-005_____	_____
MICHAEL HUBER, AIA	REGISTRATION NUMBER	DATE

STRUCTURAL ENGINEER:BUNKERS & ASSOCIATES
6687 FOREST STREET
FRAMINGTON, MINNESOTA 55024

I HEREBY CERTIFY THAT THIS SPECIFICATION WAS PREPARED BY ME OR UNDER MY DIRECT SUPERVISION AND THAT I AM A DULY REGISTERED ENGINEER UNDER THE LAWS OF THE STATE OF WISCONSIN.

_____	_____	_____
ERIC BUNKERS, PE	REGISTRATION NUMBER	DATE

END OF SECTION

River Loop Crossing Trailhead

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DIVISION 1 - GENERAL REQUIREMENTS

01 2000	PRICE & PAYMENT PROCEEDURES
01 3000	ADMINISTRATIVE REQUIREMENTS
01 3005	STANDARD TERMS AND CONDITIONS
01 4000	QUALITY REQUIREMENTS
01 7000	EXECUTION & CLOSEOUT REQUIREMENTS
01 7800	CLOSEOUT SUBMITTALS

DIVISION 2 – SITE CONSTRUCTION

NOT USED

DIVISION 3 - CONCRETE

03 2000	CONCRETE REINFORCING
03 3000	CAST-IN-PLACE CONCRETE

DIVISION 4 - MASONRY

04 2000	UNIT MASONRY
04 2723	CAVITY WALL UNIT MASONRY
04 4301	STONE MASONRY VENEER
04 7200	CAST STONE MASONRY

DIVISION 5 - METALS

NOT USED

DIVISION 6 - WOOD AND PLASTICS

06 1000	ROUGH CARPENTRY
06 1753	SHOP-FABRICATED WOOD TRUSSES

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

07 1113	BITUMINOUS DAMPPROOFING
07 2100	THERMAL INSULATION
07 2126	BLOWN INSULATION
07 2500	WEATHER BARRIERS
07 4113	METAL ROOF PANELS
07 4646	SIDING
07 9005	JOINT SEALERS

DIVISION 8 - OPENINGS

08 1113	HM DOORS & FRAMES
08 3613	SECTIONAL DOORS
08 5413	FIBERGLASS WINDOWS
08 7100	DOOR HARDWARE

DIVISION 9 - FINISHES

09 2116	GYPSUM BOARD ASSEMBLIES
09 6700	FLUID-APPLIED FLOORING
09 7733	GLASS FIBER REINFORCED PLASTIC PANELS
09 9000	PAINTING

DIVISION 10 - SPECIALTIES

10 2800	TOILET, BATH AND LAUNDRY ACCESSORIES
10 4400	FIRE PROTECTION SPECIALTIES

DIVISION 11 – PROJECT OVERVIEW

WI DOT SITE DIAGRAMS

END OF SECTION

River Loop Crossing Trailhead

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DIVISION 7 - THERMAL AND MOISTURE PROTECTION

- 07 1113 BITUMINOUS DAMPPROOFING
- 07 2100 THERMAL INSULATION
- 07 2126 BLOWN INSULATION
- 07 2500 WEATHER BARRIERS
- 07 4113 METAL ROOF PANELS
- 07 4646 SIDING
- 07 9005 JOINT SEALERS

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WI DOT SITE DIAGRAMS

END OF SECTION

Section 00 0115
INSTRUCTIONS TO BIDDERS

ST. CROIX COUNTY GOVERNMENT CENTER
ST. CROIX RIVER LOOP CROSSING TRAILHEAD

Owner:

St. Croix County Government Center
Community Development Department/Ryan Yarrington
1101 Carmichael Road
Hudson, Wisconsin 54016
Phone: 715-386-4680 or 715-386-4736

Architect:

Michael Huber Architects, LLC
351 Highview Road Hudson,
WI 54016
mhuber@mhuberarchitects.com
Phone: 651-442-3771

St. Croix County will release a Request for Bids on Monday, February 12, 2018 for New Construction of a 4-unit Family Style Restroom Facility at the St. Croix River Loop Crossing Trailhead, 77 Houlton School Circle, Town of St. Joseph, WI.

Bid Date: March 1, 2018

Bid Time: 2:00 PM

Bid Place:

St. Croix County Government Center
Government Center Room #1406
1101 Carmichael Rd.
Hudson, WI. 54016

Sealed Bids will be received by the Owner until 2:00pm on Thursday, March 1, 2018. Bids submitted after that time will be returned unopened. Bids submitted by fax or email will be discarded. Bids shall be directed to Ryan Yarrington at the address listed under Bid Place, and shall be sealed and labeled on the outside envelope as 'BID FOR ST. CROIX RIVER LOOP CROSSING TRAILHEAD RESTROOM FACILITY'. Bids will be publicly opened and read aloud at St. Croix County, Room 1406.

Digital copies of the Bidding Documents can be obtained on the St. Croix County's website at: <http://www.sccwi.gov>, Services, Business Services, Current Bid/RFP Materials quick link, select–River Loop Crossing Trailhead and Minnesota and Wisconsin Builder's Exchanges.

For those that would like a walk-through of the site, contact Ryan Yarrington 715-386-4680 or ryan.yarrington@sccwi.gov to setup an appointment.

All questions from Bidders shall be submitted in writing to Ryan Yarrington, ryan.yarrington@sccwi.gov. Questions and answers will be posted on the St. Croix County website, homepage, www.sccwi.gov Services, Business Services, Current Bid/RFP Materials–River Loop Crossing Trailhead.

A bid addendum shall be issued to all plan holders if the Architect considers it necessary.

1. Notice to Bidders: Work by Others, WI DOT, WI DOT owned property.
Portions of the main trailhead area are owned by WI DOT. Trailhead construction by the WI DOT on St. Croix County property will begin as soon as weather permits. Construction of this bathroom facility will not begin until the WI DOT has given approval to begin construction activities. This approval is anticipated for July 2018. Bidder will be required to coordinate with the WI DOT and their field engineer for the following: Weekly construction and safety meetings, site access, location of utilities, electrical conduits, landscaping, and amenities.
2. The well and septic system have previously been installed. The building sewer has been stubbed into the building location. The water line into the building will be completed by the St. Croix County Well Contractor (Butterfield). Bidder to protect previously installed facilities from damage.
3. A 5% bid bond is required with the bid form. Bond must be from a Bonding Company and not a check made out to St. Croix County for 5% of the bid! Failure to include bond with bid form will result in bid being disqualified.

SECTION 00 4100

BID FORM

THE PROJECT AND THE PARTIES TO:

Owner

St. Croix County Government Center
1101 Carmichael Road
Hudson, Wisconsin 54016

FOR:

Project: River Loop Crossing Trailhead Restroom
77 Houlton School Circle
Houlton, WI 54082

DATE: _____ **(Bidder to enter date)** **SUBMITTED BY:** **(Bidder to enter name and address)**

Bidder's Full Name _____ Address _____

City, State, Zip _____

OFFER

Having examined the Place of The Work and all matters referred to in the Instructions to Bidders and the Contract Documents prepared by St Croix County's Design Team for the above mentioned project, we, the undersigned, hereby offer to enter into a Base Bid Contract to perform the Work for the Sum of:

_____ dollars
(\$ _____), in lawful money of the United States of America.

We have included the required performance assurance bonds in the Bid Amount as required by the Instructions to Bidders.

The cost of the required bid bond (5%) is _____ dollars (\$ _____), in lawful money of the United States of America.

All applicable federal taxes are included and State of Wisconsin taxes are included in the Bid Sum.

ACCEPTANCE

This offer shall be open to acceptance and is irrevocable for thirty days from the bid closing date.

If this bid is accepted by Owner within the time period stated above, we will:

Execute the Agreement within seven days of receipt of Notice of Award.

Furnish the required bonds within seven days of receipt of Notice of Award.

Commence work within seven days after written Notice to Proceed of this bid.

CONTRACT TIME

If this Bid is accepted, we will complete work within 120 days of Notice to Proceed.

CHANGES TO THE WORK

When Owner establishes that the method of valuation for Changes in the Work will be net cost plus a percentage fee in accordance with General Conditions, our percentage fee will be: _____ percent overhead and profit on the net cost of our own Work; _____ percent on the cost of work done by any Subcontractor.

ADDENDA

The following Addenda have been received. The modifications to the Bid Documents noted below have been considered and all costs are included in the Bid Sum. Addendum # _____ Dated _____.

BID FORM SUPPLEMENTS

The following information is included with Bid submission:

BID FORM SIGNATURE(S)

The Corporate Seal of _____

(Bidder - print the full name of your firm) was
hereunto affixed in the presence of:

(Authorized signing officer, Title)
(Seal)

(Authorized signing officer, Title)

If the Bid is a joint venture or partnership, add additional forms of execution for each member of the joint venture in the appropriate form or forms as above. END OF BID FORM

**SECTION 00 7200
GENERAL CONDITIONS**

**FORM OF GENERAL CONDITIONS
RELATED REQUIREMENTS**

2.01 SECTION 00 7300 - SUPPLEMENTARY CONDITIONS.

**2.02 AIA DOCUMENT A105, GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION,
IS THE GENERAL CONDITIONS BETWEEN THE OWNER AND CONTRACTOR.**

SUPPLEMENTARY CONDITIONS

**3.01 REFER TO DOCUMENT 00 7300 - SUPPLEMENTARY CONDITIONS FOR AMENDMENTS TO
THESE GENERAL CONDITIONS.**

END OF SECTION

SECTION 00 7300

SUPPLEMENTAL CONDITIONS

INTENT

These Supplementary Conditions amend and supplement the General Conditions defined in Document 00700 and other provisions of the Contract Documents as indicated below. All provisions which are not so amended or supplemented remain in full force and effect.

1. The Supplemental Conditions modify, amplify, delete and/or add to the General Conditions. Where any article, paragraph, subparagraph or part in the General Conditions is amended by the Supplemental Conditions the provisions of such articles, paragraphs, subparagraphs or parts not so amended shall remain in effect.
2. In cases of conflict between the General Conditions and the Supplementary Conditions, these Supplementary Conditions shall have precedence.
3. The term General Conditions as used in the specifications shall be interpreted to include these Supplementary Conditions.

ARTICLE 1 - GENERAL PROVISIONS

Add the following new subparagraphs to 1.2.1:

1.2.1.1 In case of disagreement between drawings and specification, or within either document itself, the better quality or greater quantity of work shall be estimated and used in the bid or sub bid and the matter drawn to the Architect's attention in writing for decision and/or adjustment.

1.2.1.2 Intent of these specifications is to outline or indicate the items and quality of work which cannot readily be shown on the drawings.

1.2.1.3 Lists of 'work included' and 'work excluded' are not intended to enumerate each and every item of work or appurtenance required. All items and appurtenances shall be supplied for a complete job for all work reasonably inferable from the Contract Documents. All work indicated shall be supplied except items specifically noted as 'by other', 'by Owner', 'not in contract', 'existing', 'NIC' or similarly.

Add the following new subparagraphs to 1.2:

1.2.4 Drawings are not intended to be scaled for roughing in measurements or to serve as Shop Drawings.

1.2.5 All work described in the Specifications, shown on the drawings, and all related Work necessary to complete the Project shall be executed in a workmanlike manner and shall be work and materials suited for the application where such Work or materials are not specifically described.

1.2.6 All Work shall be of the respective kinds specified and indicated. Should any workmanship or materials be required which are not directly or indirectly called for in the Specifications and/or shown in the Drawings, but which are necessary for proper fulfillment of the intent thereof, such workmanship or materials shall be the same as that for similar parts that are detailed, indicated or specified, and the Contractor shall understand the same to be implied and to have provided for it in its price as fully as if it were particularly described or delineated.

ARTICLE 2 - OWNER

No Changes

ARTICLE 3 - CONTRACTOR

Add the following new subparagraph to Article 3.2:

3.2.5 If, during the progress of the work after awarded the Contract, the Contractor may discover any error, inconsistency or omission in the Contract Documents, the Contractor shall at once so report to the Architect in writing and shall halt all affected work until such discrepancies have been corrected in

accordance with requirements of Article 7. Extras will not be allowed for correction of problems that could have been avoided by careful review and the minor adjusting of size or location of various items for proper fit.

Add the following new subparagraph to Article 3.7:

3.7.6 Sewer and Water Availability Charges (SAC and WAC), utility Charges, and Park Dedication and Storm Sewer Management Fees shall be paid for by the Owner, if applicable.

ARTICLE 4 - ADMINISTRATION OF THE CONTRACT

No Changes

ARTICLE 5 - SUBCONTRACTORS

No Changes

ARTICLE 6 - CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

No Changes

ARTICLE 7 - CHANGES IN THE WORK

No Changes

ARTICLE 8 - TIME

Delete and replace 8.3.1 with the following subparagraph:

8.3.1 If the Contractor is delayed at any time in the progress of the Work by any act or neglect of the Owner, or the Architect, or by any employee of either, or by any separate contractor employed by the Owner, or by changes ordered in the Work, or by reason of force majeure which shall mean and include acts of God; acts of public enemies; strikes or lockouts; enforceable governmental or judicial orders; insurrections; riots; civil disturbance; earthquakes; floods; fires; explosions or other similar catastrophes or events not reasonably within the Contractor's control; or by delay authorized by the Owner or by concealed conditions: then the Contract Time and/or Contract Sum shall be changed by Change Order as reasonably determined by the Architect. Claims for extension of time or additional compensation for causes emunerated above will be considered under the following conditions:

1. The burden of proof to substantiate the claim for an extension shall rest with the Contractor, including evidence that the cause was beyond its control. It shall be deemed the Contractor has control over the supply of labor, materials, equipment, techniques and over its subcontractors and suppliers.
2. In the event of Changes in the Work, any consideration for a time extension will be made no later than when the Change Order is prepared. For changes which do not affect the entire Work, time extensions may be granted only for the area, phase, unit or element affected by the change, if there is a valid reason for a time extension.
3. No time extension will be granted as a result of the Contractor's improper scheduling or for failure to have Shop Drawings or samples submitted in ample time for review under a reasonable or agreed upon schedule.
4. Delays by Subcontractors of Suppliers will not be considered justification for a time extension, except for the same valid reasons and conditions enumerated under paragraph 8.3.1.

ARTICLE 9 - PAYMENTS AND COMPLETION

Add the following subparagraph:

9.3.4 The approved form of Schedule of Contract Values will accompany and support the Contractor's periodic Applications for Payment and shall indicate the value of suitably stored material as well as labor performed and materials incorporated into the work for each subdivision of the schedule during the period for which the requisition is prepared.

An amount equal to five percent (5%) of each estimate shall be retained until, in the opinion of the Architect and the Owner, the work is substantially completed, after which time the retained percentage may be reduced to an amount equal to the reasonable cost of minor correction, adjustments, uncompleted work or unsatisfactory work yet remaining to be done on the contract.

Add the following subparagraph:

9.8.6 Observation by the Architect and/or the Owner during the construction shall not be considered as acceptance of any part of the work, and the conditions found when final inspection is made shall be taken as governing the fitness of the work and whether or not it conforms with the provisions of the contract.

ARTICLE 10 - PROTECTION OF PERSONS AND PROPERTY

Add the following to subparagraph:

10.2.8 The contractor shall continuously maintain adequate protection of all work from damage and shall protect the Owner's property and adjacent property from damage arising in connection with the work.

1. Security -protection of the property at all times is the responsibility of the Contractor. Each Contractor and subcontractor shall take such precautions as are necessary to adequately protect all material from damage or deterioration and to safeguard from theft or pilferage, all materials, tools and equipment pertaining to this work which are on the site of the building, whether stored or incorporated in the structure. To remove all temporary work upon completion of project.
2. Temporary Paths of Egress from Building Exits -Whenever it is necessary to Provide temporary 'Paths of Egress' through the areas of the work, such paths shall be provided with adequate artificial light, direction signs, clearances, fire protection, etc., and shall be constructed and maintained safe from fire, smoke, and other physical dangers. Contractor shall submit all proposed details to Architect for approval.
3. Barricades and Lights -Provide all necessary barricades, light, and other appropriate warning devices as may be required by local authorities having lawful jurisdiction at all ditches, open excavations, openings in floors and walls, and other areas of potential danger to personnel or public, all items to comply with all local, State and Federal regulations.
4. Utility Lines -Protect all existing and new utility lines on or adjacent to the site. Notify all Utility Companies when work is being carried out near their lines.
5. Weather -The prime contractor and/or each subcontractor shall at all times, provide protection against rain, wind, storms, frost or heat so as to maintain all work, materials, apparatus and fixtures free from injury or damage. Carpentry contractor shall provide temporary closures of door, window or other openings as necessary for the intended use or may install the permanent construction shown for such locations, provided that such permanent construction may be suitably maintained and protected from damage, and must be in perfect condition when delivered to the Owner. At the end of each day's work, all new work subject to damage by the elements and all points where water or frost may enter any part of the structure, shall be covered.

Add the following to subparagraph to Article 10

10.5 The Contractor and all Subcontractors and Sub-subcontractor (of any tier) shall comply with all applicable safety regulations. The Contractor shall be responsible for all job site safety. The Contractor and all Subcontractors and Sub-subcontractors (of any tier) shall provide, upon request, the following:

1. Documentation of employee safety training.
2. Notification of accidents/incidents, theft or vandalism within one working day.
3. A copy of all Contractor, Subcontractor and Sub-subcontractor written safety and loss control manuals and programs and all right to know and hazard communications programs.
4. Compliance with any requests for safety improvements.
5. Material Safety Data Sheets. The Contractor shall be responsible for the proper maintenance

and exchange of Material Safety Data Sheets and other hazard communication information required to be made available or to be exchanged between or among persons at the site in accordance with the requirements of OSHA and other applicable laws and regulations.

The contract Documents impose no responsibility for job site inspections or safety on the Owner. Notwithstanding any language to the contrary, the Owner shall not have any responsibility for job site inspections, safety recommendation, or safety. Any notices or comments by the Owner regarding safety and any inspection or observations are solely for the benefit of the Owner and shall not create any duty, obligation, liability to anyone other than the Owner.

ARTICLE 11 - INSURANCE AND BONDS

Delete subparagraph 11.1.1 and insert the following. Points 1-8 to remain.

11.1.1 Prior to starting the Work, the Contractor shall purchase from and maintain in a company or companies lawfully authorized to do business in the jurisdiction in which the Project is located such insurance as will protect against the claims set forth below which may arise out of a result from operations under the Contract, whether such operations be by the Contractor, Subcontractor, Sub-subcontractor (of any tier), or by anyone directly or indirectly employed by any of them or by anyone for whose acts any of them may be liable regardless of whose fault may have caused or may be claimed to have caused such claims.

Add the following new subparagraph 11.1.2.1:

11.1.2.1 The insurance provided by the Contractor shall be written for not less than the following, or greater if required by law:

1. Workers' Compensation -State Statutory (Policy to include a waiver of subrogation in favor of the owner.)
2. Employer's Liability -Bodily injury by accident -\$100,000 each accident; bodily injury by disease -\$500,000 contract limit; bodily injury by disease -\$100,000 each employee.
3. Commercial General Liability -(including without limitation Premises Operations; Independent Contractors (let or sublet work); Contractual Liability; Products and Completed Operations; Explosion, Collapse and Underground ("XCU"); Broad Form Property, Personal Injury and Advertising Liability (employment exclusion deleted); Incidental Medical Malpractice; Amendment of Pollution exclusion-hostile fire; Cross-liability and severability of interest; Minimum Coverage \$1,000,000 Combined Single Limit per occurrence and a \$2,000,000 general and products/completed operations aggregate limits.
4. Commercial Auto Coverage -\$1,000,000 Combined Single Limit per occurrence. (this policy shall cover all contractor furnished, owned, hired, and non-owned vehicles, including the loading and unloading thereof.)
5. Umbrella Excess Liability -(following form on Employer's Liability, Comprehensive General Liability and Commercial Automobile Coverages). Minimum Coverage -\$5,000,000 Minimum Limit of liability coverage.

All of the above insurance shall be on an occurrence policy form. The limits of coverage shall not be reduced by the costs of defense. The Contractor shall maintain the required insurance in force continuously from before commencing work for a period at least twelve months after completion, or for such longer period as otherwise be required by the Contract Documents. If greater limits or coverages are required elsewhere in the Contract Documents, the Contractor shall provide those coverages and limits as well.

The Contractor's Contractual Liability Insurance shall cover the Contractor's obligations under this agreement.

Add the following new subparagraphs to Article 11.1:

11.1.5 The Contractor shall not allow insurance required by this Agreement to lapse, be canceled, reduced in limits or coverage, non-renewed, or materially changed or have restrictive modifications added during the performance of the work or other periods of required coverage. All insurance policies shall contain a provision that coverages afford thereunder shall not be canceled without thirty (30) days prior written notice to the Owner. Certificates of insurance shall be filed with the Owner prior to start of the Contractor's Construction Work. Such Certificates of Insurance shall be in a form acceptable to the Owner and shall provide satisfactory evidence that the Contractor has complied with all insurance requirements. If any of the insurance coverages be required to remain in force after final payment, an additional certificate evidencing continuation for such coverage shall be submitted with the final Application for Payment.

11.1.6 Compliance by the Contractor with the foregoing insurance requirements shall not relieve the Owner from liability for amounts in excess of the limits of insurance.

ARTICLE 12 - UNCOVERING AND CORRECTION OF WORK

No Changes

ARTICLE 13 - MISCELLANEOUS PROVISIONS

No Changes

ARTICLE 14 - TERMINATION OR SUSPENSION OF THE CONTRACT

No Changes

END OF DOCUMENT 00 07300

SECTION 01 2000
PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Procedures for preparation and submittal of applications for progress payments.

1.02 SCHEDULE OF VALUES

- A. Submit a printed schedule on AIA Form G703 - Application and Certificate for Payment Continuation Sheet.

1.03 APPLICATIONS FOR PROGRESS PAYMENTS

- A. Payment Period: Submit at intervals stipulated in the Agreement.
- B. Present required information in typewritten form.
- C. Form: AIA G702 Application and Certificate for Payment and AIA G703 - Continuation Sheet including continuation sheets when required.
- D. Execute certification by signature of authorized officer.
- E. List each authorized Change Order as a separate line item, listing Change Order number and dollar amount as for an original item of Work.
- F. Submit three copies of each Application for Payment.
- G. Include the following with the application:
 - 1. Construction progress schedule, revised and current as specified in Section 01 3000.
 - 2. Partial release of liens from major Subcontractors and vendors.
- H. When Architect requires substantiating information, submit data justifying dollar amounts in question. Provide one copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description.

1.04 MODIFICATION PROCEDURES

- A. Architect will advise of minor changes in the Work not involving an adjustment to Contract Sum or Contract Time as authorized by the Conditions of the Contract by issuing supplemental instructions on Architect's Letterhead.
- B. Construction Change Directive: Architect may issue a document, signed by Owner, instructing Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
 - 1. The document will describe changes in the Work, and will designate method of determining any change in Contract Sum or Contract Time.
 - 2. Promptly execute the change in Work.
- C. For changes for which advance pricing is desired, Architect will issue a document that includes a detailed description of a proposed change with supplementary or revised drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. Contractor shall prepare and submit a fixed price quotation within 7 days.
- D. Proposal Request: Architect may issue a document which includes a detailed description of a proposed change with supplementary or revised Drawings and specifications, a change in Contract Time for executing the change with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. Contractor shall then prepare and submit a fixed price quotation for the change.
- E. Computation of Change in Contract Amount:
 - 1. Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation. A lump sum for an increase in Contract sum may contain an allowance for Contractor's overhead and profit. No allowance for overhead and profit will be allowed if change results in a decrease in cost.

2. Unit prices stated in Contract Documents or subsequently agreed upon unit prices shall cover Contractor's costs for labor, materials, equipment and related services including such costs for subcontracted work, and overhead and profit.
 3. Cost to be determined in a manner agreed upon by parties and a mutually acceptable fixed or percentage fee.
- F. Substantiation of Costs: Provide full information required for evaluation.
1. On request, provide the following data:
 - a. Quantities of products, labor, and equipment.
 - b. Taxes, insurance, and bonds.
 - c. Overhead and profit.
 - d. Justification for any change in Contract Time.
 - e. Credit for deletions from Contract, similarly documented.
 2. For Time and Material work, submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract.
- G. Execution of Change Orders: Architect will issue Change Orders for signatures of parties as provided in the Conditions of the Contract on AIA G701.
- H. After execution of Change Order, promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum.
- I. Promptly revise progress schedules to reflect any change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.
- J. Promptly enter changes in Project Record Documents.

1.05 APPLICATION FOR FINAL PAYMENT

- A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 3000
ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Preconstruction meeting.
- B. Progress meetings.
- C. Construction progress schedule.
- D. Progress photographs.
- E. Submittals for review, information, and project closeout.
- F. Number of copies of submittals.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PRECONSTRUCTION MEETING

- A. Owner will schedule a meeting after Notice of Award.
- B. Attendance Required:
 - 1. Owner.
 - 2. Contractor.
 - 3. Appropriate Subcontractors to be determined.
 - 4. Appropriate Consultants to be determined.
- C. Agenda:
 - 1. Submission of list of Subcontractors, schedule of values, and progress schedule.
 - 2. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
- D. Record minutes and distribute copies within two days after meeting to participants, with one copies to Architect, Owner, participants, and those affected by decisions made.

3.02 PROGRESS MEETINGS

- A. Schedule and administer meetings throughout progress of the Work at maximum monthly intervals.
- B. Make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.
- C. Attendance Required: Job superintendent, major Subcontractors and suppliers, Owner, as appropriate to agenda topics for each meeting.
- D. Agenda:
 - 1. Review minutes of previous meetings.
 - 2. Review of Work progress.
 - 3. Field observations, problems, and decisions.
 - 4. Identification of problems which impede planned progress.
 - 5. Review of submittals schedule and status of submittals.
 - 6. Maintenance of progress schedule.
 - 7. Corrective measures to regain projected schedules.
 - 8. Planned progress during succeeding work period.
 - 9. Maintenance of quality and work standards.
 - 10. Effect of proposed changes on progress schedule and coordination.
 - 11. Other business relating to Work.
- E. Record minutes and distribute copies within two days after meeting to participants, with one copy to Architect, Owner, participants, and those affected by decisions made.

3.03 CONSTRUCTION PROGRESS SCHEDULE

- A. If preliminary schedule requires revision after review, submit revised schedule within 10 days.
- B. Within 20 days after review of preliminary schedule, submit draft of proposed complete schedule for review.
 - 1. Include written certification that major contractors have reviewed and accepted proposed schedule.
- C. Within 10 days after joint review, submit complete schedule.
- D. Submit updated schedule with each Application for Payment.

3.04 SUBMITTALS FOR REVIEW

- A. When the following are specified in individual sections, submit them for review:
 - 1. Product data.
 - 2. Shop drawings.
 - 3. Samples for selection.
 - 4. Samples for verification.
- B. Submit to Architect for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
- C. Samples will be reviewed only for aesthetic, color, or finish selection.
- D. General: Electronic copies of CAD Drawings of the Contract Documents will not be provided by Architect for Contractor's use in preparing shop drawings.
- E. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 01 7800 - Closeout Submittals.

3.05 SUBMITTALS FOR INFORMATION

- A. When the following are specified in individual sections, submit them for information:
 - 1. Design data.
 - 2. Certificates.
 - 3. Test reports.
 - 4. Inspection reports.
 - 5. Manufacturer's instructions.
 - 6. Manufacturer's field reports.
 - 7. Other types indicated.
- B. Submit for Architect's knowledge as contract administrator or for Owner. No action will be taken.

3.06 SUBMITTALS FOR PROJECT CLOSEOUT

- A. Submit Correction Punch List for Substantial Completion.
- B. Submit Final Correction Punch List for Substantial Completion.
- C. When the following are specified in individual sections, submit them at project closeout:
 - 1. Project record documents.
 - 2. As-built documentation in both paper and electronic format.
 - 3. Operation and maintenance data.
 - 4. Warranties.
 - 5. Other types as indicated.
- D. Submit for Owner's benefit during and after project completion.

3.07 NUMBER OF COPIES OF SUBMITTALS

- A. Documents for Review:
 - 1. Small Size Sheets, Not Larger Than 8-1/2 x 11 inches (215 x 280 mm): Submit the number of copies which the Contractor requires, plus two copies which will be retained by the Architect.

2. Larger Sheets, Not Larger Than 24 x 36 inches (____ mm): Submit the number of opaque reproductions which Contractor requires, plus two copies which will be retained by Architect.
- B. Documents for Information: Submit two copies.
- C. Documents for Project Closeout: Make one reproduction of submittal originally reviewed. Submit one extra of submittals for information.
- D. Samples: Submit the number specified in individual specification sections; one of which will be retained by Architect.
 1. After review, produce duplicates.
 2. Retained samples will not be returned to Contractor unless specifically so stated.

3.08 SUBMITTAL PROCEDURES

- A. Shop Drawing Procedures:
 1. Prepare accurate, drawn-to-scale, original shop drawing documentation by interpreting the Contract Documents and coordinating related Work.
 2. Generic, non-project specific information submitted as shop drawings do not meet the requirements for shop drawings.
- B. Transmit each submittal with a copy of approved submittal form.
- C. Transmit each submittal with AIA Form G810.
- D. Sequentially number the transmittal form. Revise submittals with original number and a sequential alphabetic suffix.
- E. Identify Project, Contractor, Subcontractor or supplier; pertinent drawing and detail number, and specification section number, as appropriate on each copy.
- F. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of Products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.
- G. Deliver submittals to Architect at business address.
- H. Schedule submittals to expedite the Project, and coordinate submission of related items.
- I. For each submittal for review, allow 15 days excluding delivery time to and from the Contractor.
- J. Identify variations from Contract Documents and Product or system limitations which may be detrimental to successful performance of the completed Work.
- K. Provide space for Contractor and Architect review stamps.
- L. When revised for resubmission, identify all changes made since previous submission.
- M. Distribute reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.
- N. Submittals not requested will not be recognized or processed.

END OF SECTION

STANDARD TERMS AND CONDITIONS

1. **DEFINITIONS.** In this section 'Contracting Party' shall mean any party that is entering into this Agreement with the County of St. Croix 'St. Croix' shall mean the County of St. Croix. These definitions shall apply only to this section titled 'Standard Terms and Conditions' and shall not replace, modify or supersede any definitions used in other sections of this Agreement.

2. **STANDARD OF PERFORMANCE.** Contracting Party agrees that the performance of the services, pursuant to the terms and conditions of this Agreement, shall be performed in a manner consistent with the degree of care and skill ordinarily exercised by members of the same professions currently practicing under similar circumstances providing like services. Contracting Party agrees to abide by all applicable federal, state and local laws, regulations and ordinances, and all provisions of this Agreement.

3. **FULLY QUALIFIED.** Contracting Party represents that all personnel engaged in the performance of the services set forth in this Agreement shall be fully qualified and shall be authorized or permitted under state and local law to perform the services.

4. **SCOPE OF SERVICES.** Contracting Party is required to perform, do and carryout in a satisfactory, timely, and professional manner the services set forth in this Agreement. The Contracting Party is required to furnish all services and labor necessary as indicated in this Agreement, including without limitation materials, equipment, supplies, and incidentals. The scope of services to be performed shall include, without limitation, those services set forth in this Agreement. St. Croix may from time to time request the Contracting Party to perform additional services which are not set forth in this Agreement. In the event that such a request is made, the performance of such services shall be subject to the terms, conditions and contingencies set forth in this Agreement.

5. **CHANGE OF SCOPE.** The scope of service set forth in this Agreement is based on facts known at the time of the execution of this Agreement, including, if applicable, information supplied by Contracting Party. Scope may not be fully definable during initial phases. As projects progress, facts discovered may indicate that the scope must be redefined. Parties shall provide a written amendment to this Agreement to recognize such change.

6. **COMPENSATION.** Contracting Party will be compensated by St. Croix for the services provided under this Agreement and subject to the terms, conditions and contingences set forth herein. Payments to Contracting Party for services rendered under this Agreement will be based on itemized invoices submitted on a monthly basis by the Contracting Party to St. Croix. These invoices must be itemized to include labor costs and the Contracting Party's direct expenses, including subcontractor costs. In addition, such invoices shall show the hours worked by the Contracting Party's staff and the amount of work completed as a percentage of the work to be performed. The final payment of the balance due the Contracting Party for the completed service shall be made upon completion and acceptance of the services performed by the Contracting Party under this Agreement.

7. **TAXES, SOCIAL SECURITY, INSURANCE AND GOVERNMENT REPORTING.** Personal income tax payments, social security contributions, insurance and all other governmental reporting and contributions required as a consequence of the Contracting Party receiving payment under this Agreement shall be the sole responsibility of the Contracting Party.

8. **TERMINATION FOR CAUSE.** If, through any cause, the Contracting Party shall fail to fulfill in a timely and proper manner its obligations under this Agreement, or if the Contracting Party shall violate any of the covenants, agreements, or stipulations of this Agreement, St. Croix shall thereupon have the right to terminate this Agreement by giving written notice to the Contracting Party of such termination and specifying the effective date, at least ten (10) days before the effective date –of such termination. In such event, all finished or unfinished documents, data, studies, surveys, drawings, maps, models, photographs, reports or other material related to the services performed by the Contracting Party under this Agreement for which compensation has been made or may be agreed to be made shall, at the option of St. Croix, become the property of St. Croix. Notwithstanding the foregoing, the Contracting Party shall not be relieved of liability to St. Croix for damages sustained by St. Croix by virtue of this Agreement by the Contracting Party, and St. Croix may withhold any payments to the Contracting Party for the purpose of setoff until such time as the exact amount of damages due to St. Croix from the Contracting Party is determined.

9. **TERMINATION FOR CONVENIENCE.** St. Croix may terminate this Agreement at any time and for any reason by giving written notice to the Contracting Party of such termination and specifying the effective date, at least ten (10) days before the effective date of such termination. If this Agreement is terminated by St. Croix pursuant to this provision, Contracting Party will be paid an amount which bears the same ratio to the total compensation as the services actually and satisfactorily performed bear to the total services of the Contracting Party covered by this Agreement, less payments for such services as were previously made. The value of the services rendered and delivered by Contracting Party will be determined by St. Croix.

10. **SAFETY.** Unless specifically included as a service to be provided under this Agreement, St. Croix specifically disclaims any authority or responsibility for general job site safety, or the safety of persons or property. Contracting Party shall be responsible to follow all safety regulations per State and Federal guidelines.

11. **DELAYS.** If performance of St. Croix's obligations is delayed through no fault of St. Croix, St. Croix shall be entitled to an extension of time equal to the delay.

12. **OPINIONS OF COST.** Any opinion of costs prepared by St. Croix is supplied for general guidance of Contracting Party only. St. Croix cannot guarantee the accuracy of such opinions as compared to actual costs to Contracting Party.

13. **USE OF ST. CROIX PROPERTY.** Any property belonging to St. Croix being provided for use by Contracting Party shall be used in a responsible manner and only for the purposes provided in this Agreement. No changes, alterations or additions shall be made to the property unless otherwise authorized by this Agreement.

14. **INSURANCE.** Contracting Party shall, at its sole expense, obtain and maintain in effect at all times during this Agreement the following insurance coverage:

1) Commercial General Liability Insurance of not less than \$1,000,000.00 per occurrence for bodily injury, personal injury and property damage;

2) Automobile Liability Insurance of not less than \$1,000,000.00 per occurrence for bodily injury and property damage covering all vehicles to be used in relationship to this Agreement;

3) Umbrella Liability Insurance of not less than \$1,000,000.00 per occurrence for bodily injury, personal injury and property damage in excess of coverage carried for commercial general liability and automobile liability;

4) Professional Liability Insurance of not less than \$1,000,000.00 per claim and annual aggregate; and

5) To the extent that Contracting Party employs any employees or as otherwise required by law, Workers' Compensation and Employees' Liability Insurance with Wisconsin statutory limits. On the certificate of insurance, St. Croix shall be named as an additional insured on any General Liability Insurance, Automobile Insurance, and Umbrella Liability Insurance. The certificate must state the following: The County of St. Croix, its officers, agents, employees, and authorized volunteers shall be Additional Insureds. Prior to execution of the Agreement, Contracting Party shall file with St. Croix, a certificate of insurance signed by the insurer's representative evidencing the coverage required by this Agreement. Such evidence shall include an additional insured endorsement signed by the insurer's representative. Contracting Party shall provide St. Croix with a thirty (30) day notice prior to termination or cancellation of the policy. St. Croix reserves the right to require review and approval of the actual policy of insurance before it executes this Agreement.

15. **INDEMNIFICATION.** To the fullest extent allowable by law, Contracting Party hereby indemnifies and shall defend and hold harmless, at Contracting Party's expense, St. Croix, its elected and appointed officials, committee members, officers, employees or authorized representatives or volunteers, from and against any and all suits, actions, legal or administrative proceedings, claims, demands, damages, liabilities, losses, interest, attorney's fees (including in-house counsel legal fees), costs and expenses of whatsoever kind, character or nature whether arising before, during, or after completion of the Agreement hereunder and in any manner directly or indirectly caused or contributed to in whole or in part, by reason of any act, omission, fault, or negligence, whether active or passive of Contracting Party, or of anyone acting under its direction or control or on its behalf in connection with or incident to the performance of this Agreement, regardless if liability without fault is sought to be imposed on St. Croix. Contracting Party's aforesaid indemnity and hold harmless agreement shall not be applicable to any liability caused by the willful misconduct of St. Croix, its elected and appointed officials, officers, employees or authorized representatives or volunteers. Nothing in this Agreement shall be construed as St. Croix waiving its statutory limitation and/or immunities as set forth in the applicable Wisconsin Statutes or other applicable law. This indemnity provision shall survive the termination or expiration of this Agreement.

Contracting Party shall reimburse St. Croix, its elected and appointed officials, officers, employees or authorized representatives or volunteers for any and all legal expenses and costs incurred by each of them in connection therewith or in enforcing the indemnity herein provided. Contracting Party's obligation to indemnify shall not be restricted to insurance proceeds, if any, received by St. Croix, its elected and appointed officials, officers, employees or authorized representatives or volunteers.

16. **NO PERSONAL LIABILITY.** Under no circumstances shall any trustee, officer, Official, commissioner, director, member, partner or employee of St. Croix have any personal liability arising out of this Agreement, and Contracting Party shall not seek or claim any such personal liability.

17. **INDEPENDENT CONTRACTORS.** The parties, their employees, agents, volunteers, and representative shall be deemed independent contractors of each other and shall in no way be deemed as a result of this Agreement to be employees of the other. The parties, their employees, agents, volunteers, and representatives are not entitled to any of the benefits that the other provides for its employees. The parties shall not be considered joint agents, joint ventures, or partners.

18. **GOVERNING LAW.** This Agreement and all questions and issues arising in connection herewith shall be governed by and construed in accordance with the laws of the State of Wisconsin. Venue for any action arising out of or in any way related to this Agreement shall be exclusively in St. Croix County, Wisconsin. Each party waives its right to challenge venue.

19. **JURY TRIAL WAIVER.** The parties hereby waive their respective rights to a jury trial on any claim or cause of action based upon or arising from or otherwise related to this Agreement. This waiver of right to trial by jury is given knowingly and voluntarily by the parties and is intended to encompass individually each instance and each issue as to which the right to a trial by jury would otherwise accrue. Each party is hereby authorized to file a copy of this section in any proceeding as conclusive evidence of this waiver by the other party.

20. **NOTIFICATION.** Contracting Party shall:

1) As soon as possible and in any event within a reasonable period of time after the occurrence of any default, notify St. Croix in writing of such default and set forth the details thereof and the action which is being taken or proposed to be taken by Contracting Party with respect thereto.

2) Promptly notify St. Croix of the commencement of any litigation or administrative proceedings that would cause any representation and warranty of Contracting Party contained in this Agreement to be untrue.

3) Notify St. Croix, and provide copies, immediately, upon receipt, of any notice, pleading, citation, indictment, complaint, order or decree from any federal, state or local government agency or regulatory body, asserting or alleging a circumstance or condition that requires or may require a financial contribution by Contracting Party or any guarantor or an investigation, clean-up, removal, remedial action or other response by or on the part of Contracting Party or any guarantor under any environmental laws, rules, regulations, ordinances or which seeks damages or civil, criminal or punitive penalties from or against Contracting Party or any

guarantor for an alleged violation of any environmental laws, rules, regulations or ordinances.

21. SEVERABILITY. The provisions of this Agreement are severable. If any provision or part of this Agreement or the application thereof to any person or circumstance shall be held by a court of competent jurisdiction to be invalid or unconstitutional for any reason, the remainder of this Agreement and the application of such provision or part thereof to other persons or circumstances shall not be affected thereby.

22. ASSIGNMENT, SUBLET, AND TRANSFER. Contracting Party shall not assign, sublet, or transfer its interests or obligations under the provisions of this Agreement without the prior written consent of St. Croix. This Agreement shall be binding on the heirs, successors, and assigns of each party hereto. Contracting Party shall provide not less than forty-five (45) days advance written notice of any intended assignment, sublet or transfer.

23. NO WAIVER. The failure of any party to insist, in anyone or more instance, upon performance of any of the terms, covenants, or conditions of this Agreement shall not be construed as a waiver, or relinquishment of the future performance of any such term, covenant, or condition by any other party hereto but the obligation of such other party with respect to such future performance shall continue in full force and effect.

24. SUBCONTRACTING. None of the services to be performed under this Agreement shall be subcontracted without the prior written approval of St. Croix. If any of the services are subcontracted, the performance of such services shall be specified by written contract and shall be subject to each provision of this Agreement. Contracting Party shall be as fully responsible to St. Croix for the acts and omissions of its subcontractors and of person either directly or indirectly employed by them, as it is for acts and omissions of persons directly employed by it.

25. CONFLICTS OF INTEREST. Contracting Party covenants that it presently has no interest and shall not acquire any interest, direct or indirect, which would conflict in any manner or degree with the performance of its services hereunder. Contracting Party further covenants that in the performance of this Agreement no person having any conflicting interest shall be employed. Any interest on the part of Contracting Party or its employee must be disclosed to St. Croix.

26. NON-DISCRIMINATION. Pursuant to law, it is unlawful and Contracting Party agrees not to willfully refuse to employ, to discharge, or to discriminate against any person otherwise qualified because of race, color, religion, sex, sexual orientation, age, disability, national origin or ancestry, lawful source of income, marital status, creed, or familial status; not to discriminate for the same reason in regard to tenure, terms, or conditions of employment, not to deny promotion or increase in compensation solely for these reasons; not to adopt or enforce any employment policy which discriminates between employees on account of race, color, religion, sex, creed, age, disability, national origin or ancestry, lawful source of income, marital status or familial status; not to seek such information as to any employee as a condition of employment; not to penalize any employee or discriminate in the selection of personnel for training, solely on the basis of race, color, religion, sex, sexual orientation, age, disability, national origin or ancestry, lawful source of income, marital status, creed or familial status. Contracting Party shall include or cause to be included in each subcontract covering any of the services to be performed under this Agreement a provision similar to the above paragraph, together with a clause requiring such insertion in further subcontracts that may in turn be made.

27. POLITICAL ACTIVITIES. Contracting Party shall not engage in any political activities while in performance of any and all services and work under this Agreement.

28. GOVERNMENTAL APPROVALS. Contracting Party acknowledges that various undertakings of St. Croix described in this Agreement may require approvals from the St. Croix County Board of Supervisors, St. Croix County bodies, and/or other public bodies, some of which may require public hearings and other legal proceedings as conditions precedent thereto. Contracting Party further acknowledges that this Agreement is subject to appropriation by the St. Croix County Board of Supervisor's. St. Croix's obligation to perform under this Agreement is conditioned upon obtaining all such approvals in the manner required by law. St. Croix cannot assure that all such approvals will be obtained; however, it agrees to use good faith efforts to obtain such approvals on a timely basis.

29. ENTIRE AND SUPERSEDING AGREEMENT. This writing, all Exhibits hereto, and the other documents and agreements referenced herein, constitute the entire Agreement between the parties with respect to the subject matter hereof, and all prior agreements, correspondences, discussions and understandings of the parties (whether written or oral) are merged herein and made a part hereof. This Agreement, however, shall be deemed and read to include and incorporate such minutes, approvals, plans, and specifications, as referenced in this Agreement, and in the event of a conflict between this Agreement and any action of, granting approvals or conditions attendant with such approval, the specific action of St. Croix shall be deemed controlling. To the extent that any terms and conditions contained in this Agreement, all Exhibits hereto, and the other documents and agreement referenced herein conflict with these Standard Terms and Conditions, the Standard Terms and Conditions shall take precedence.

30. AMENDMENT. This Agreement shall be amended only by formal written supplementary amendment. No oral amendment of this Agreement shall be given any effect. All amendments to this Agreement shall be in writing executed by both parties.

31. IMPLEMENTATION SCHEDULE AND TIME OF THE ESSENCE. Any and all phases and schedules which are the subject of approvals, or as set forth herein, shall be governed by the principle that time is of the essence, and modification or deviation from such schedules shall occur only upon approval of St. Croix. The County Administrator or in the County Administrator's absence, the Corporation Counsel or Risk Manager, shall have the ability to postpone any deadline listed herein, up to a maximum of ninety (90) days.

32. TIME COMPUTATION. Any period of time described in this Agreement by reference to a number of days includes Saturdays, Sundays, and any state or national holidays. Any period of time described in this Agreement by reference to a number of business days does not include Saturdays, Sundays or any state or national holidays. If the date or last date to perform any act or to give any notices is a Saturday, Sunday or state or national holiday, that act or notice may be timely performed or given on the next succeeding day which is not a Saturday, Sunday or state or national holiday.

33. NOTICES. Any notice, demand, certificate or other communication under this Agreement shall be given in writing and deemed effective: a) when personally delivered; b) three (3) days after deposit within the United States Postal Service, postage prepaid, certified, return receipt requested; or c) one (1) business day after deposit with a nationally recognized overnight courier service, addressed by name and to the party or person intended as follows:

EFFECTED COUNTY DEPARTMENT (Addressee)

County of St. Croix
1101 Carmichael Road
Hudson, WI 54016

Copy to: Attn. County Corporation Counsel
1101 Carmichael Road
Hudson, WI 54016

Contracting party shall identify in writing and provide to St. Croix the contact person and address for notices under this Agreement.

34. INCORPORATION OF PROCEEDINGS AND EXHIBITS. All motions adopted, approvals granted, minutes documenting such motions and approvals, and plans and specifications submitted in conjunction with any and all approvals as granted by St. Croix, including but not limited to adopted or approved plans or specifications on file with St. Croix, and further including but not limited to all exhibits as referenced herein, are incorporated by reference herein and are deemed to be the contractual obligation of Contracting Party whether or not herein enumerated.

35. ACCESS TO RECORDS. Contracting Party, at its sole expense, shall maintain books, records, documents and other evidence pertinent to this Agreement in accordance with accepted applicable professional practices. St. Croix, or any of its duly authorized representatives, shall have access, at no cost to St. Croix, to such books, records, documents, papers or any records, including electronic, of Contracting Party which are pertinent to this Agreement, for the purpose of making audits, examinations, excerpts and transcriptions.

36. PUBLIC RECORDS LAW. Contracting Party understands and acknowledges that St. Croix is subject to the Public Records Law of the State of Wisconsin. As such, Contracting Party agrees to retain all records as defined by Wisconsin Statute § 19.32(2) applicable to this Agreement for a period of not less than seven (7) years after the termination or expiration of this Agreement. Contracting Party agrees to assist St. Croix in complying with any public records request that St. Croix receives pertaining to this Agreement. Additionally, Contracting Party agrees to indemnify and hold harmless St. Croix, its elected and appointed officials, officers, employees, and authorized representatives for any liability, including without limitation, attorney fees related to or in any way arising from Contracting Party's actions or omissions which contribute to St. Croix's inability to comply with the Public Records Law. In the event that Contracting Party decides not to retain its records for a period of seven (7) years, then it shall provide written notice to St. Croix whereupon St. Croix shall take custody of said records assuming such records are not already maintained by. This provision shall survive the termination of this Agreement.

37. CONSTRUCTION. This Agreement shall be construed without regard to any presumption or rule requiring construction against the party causing such instrument to be drafted. This Agreement shall be deemed to have been drafted by the parties of equal bargaining strength. The captions appearing at the first of each numbered section of this Agreement are inserted and included solely for convenience but shall never be considered or given any effect in construing this Agreement with the duties, obligations, or liabilities of the respective parties hereto or in ascertaining intent, if any questions of intent should arise. All terms and words used in this Agreement, whether singular or plural and regardless of the gender thereof, shall be deemed to include any other number and any other gender as the context may require.

38. NO THIRD-PARTY BENEFICIARY. Nothing contained in this Agreement, nor the performance of the parties hereunder, is intended to benefit, nor shall inure to the benefit of, any third party.

39. COMPLIANCE WITH LAW. The parties shall comply in all material respects with any and all applicable federal, state and local laws, regulations and ordinances.

40. FORCE MAJEURE. St. Croix shall not be responsible to Contracting Party for any resulting losses and it shall not be a default hereunder if the fulfillment of any of the terms of this Agreement is delayed or prevented by revolutions or other civil disorders, wars, acts of enemies, strikes, fires, floods, acts of God, adverse weather conditions, legally required environmental remedial actions, industry-wide shortage of materials, or by any other cause not within the control of the party whose performance was interfered with, and which exercise of reasonable diligence, such party is unable to prevent, whether of the class of causes hereinabove enumerated or not, and the time for performance shall be extended by the period of delay occasioned by any such cause.

41. GOOD STANDING. Contracting Party affirms that it is a company duly formed and validly existing and in good standing under the laws of the State of Wisconsin and has the power and all necessary licenses, permits and franchises to own its assets and properties and to carry on its business. Contracting Party is duly licensed or qualified to do business and is in good standing in the State of Wisconsin and in all other jurisdictions in which failure to do so would have a material adverse effect on its business or financial condition.

42. AUTHORITY. The persons signing this Agreement warrant that they have the authority to sign as, or on behalf of, the party for whom they are signing.

43. EXECUTION OF AGREEMENT. Contracting Party shall sign and execute this Agreement on or before sixty (60) days of its approval by St. Croix, and Contracting Party's failure to do so will render the approval of the Agreement by St. Croix null and void unless otherwise authorized.

44. COUNTERPARTS. This Agreement may be executed in one or more counterparts, all of which shall be considered but one and the same agreements and shall become effective when one or more counterparts have been signed by each of the parties and delivered to the other party.

45. SURVIVAL. All express representations, indemnifications and limitations of liability included in this Agreement will survive its completion or termination for any reason.

SECTION 01 4000
QUALITY REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. References and standards.
- B. Submittals.
- C. References and standards.
- D. Mock-ups.
- E. Control of installation.
- F. Tolerances.
- G. Testing and inspection agencies and services.
- H. Control of installation.
- I. Mock-ups.
- J. Tolerances.
- K. Manufacturers' field services.
- L. Defect Assessment.

1.02 REFERENCE STANDARDS

- A. ASTM C1021 - Standard Practice for Laboratories Engaged in Testing of Building Sealants; 2008 (Reapproved 2014).
- B. ASTM C1077 - Standard Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation; 2014.
- C. ASTM C1093 - Standard Practice for Accreditation of Testing Agencies for Masonry; 2013.
- D. ASTM D3740 - Standard Practice for Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction; 2012a.
- E. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection and/or Testing; 2014a.
- F. ASTM E543 - Standard Specification for Agencies Performing Nondestructive Testing; 2013.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Testing Agency Qualifications:
 - 1. Prior to start of Work, submit agency name, address, and telephone number, and names of full time registered Engineer and responsible officer.
- C. Design Data: Submit for Architect's knowledge as contract administrator for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents, or for Owner's information.
- D. Test Reports: After each test/inspection, promptly submit two copies of report to Architect and to Contractor.
 - 1. Include:
 - a. Date issued.
 - b. Project title and number.
 - c. Name of inspector.
 - d. Date and time of sampling or inspection.
 - e. Identification of product and specifications section.
 - f. Location in the Project.
 - g. Type of test/inspection.

- h. Date of test/inspection.
 - i. Results of test/inspection.
 - j. Conformance with Contract Documents.
 - k. When requested by Architect, provide interpretation of results.
- E. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to Architect, in quantities specified for Product Data.
 - 1. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- F. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the Owner's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.
- G. Manufacturer's Field Reports: Submit reports for Architect's benefit as contract administrator or for Owner.
 - 1. Submit report in duplicate within 30 days of observation to Architect for information.
 - 2. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.
- H. Erection Drawings: Submit drawings for Architect's benefit as contract administrator or for Owner.
 - 1. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.
 - 2. Data indicating inappropriate or unacceptable Work may be subject to action by Architect or Owner.

1.04 REFERENCES AND STANDARDS

- A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.
- C. Obtain copies of standards where required by product specification sections.
- D. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.
- E. Should specified reference standards conflict with Contract Documents, request clarification from Architect before proceeding.
- F. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of Architect shall be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.05 TESTING AND INSPECTION AGENCIES AND SERVICES

- A. Owner will employ and pay for services of an independent testing agency to perform other specified testing.
- B. Employment of agency in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.

- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.
- D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Have Work performed by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.02 MOCK-UPS

- A. Tests shall be performed under provisions identified in this section and identified in the respective product specification sections.
- B. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.
- C. Accepted mock-ups shall be a comparison standard for the remaining Work.
- D. Where mock-up has been accepted by Architect and is specified in product specification sections to be removed, protect mock-up throughout construction, remove mock-up and clear area when directed to do so by Architect.

3.03 TOLERANCES

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

3.04 TESTING AND INSPECTION

- A. Testing Agency Duties:
 - 1. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
 - 2. Perform specified sampling and testing of products in accordance with specified standards.
 - 3. Ascertain compliance of materials and mixes with requirements of Contract Documents.
 - 4. Promptly notify Architect and Contractor of observed irregularities or non-conformance of Work or products.
 - 5. Perform additional tests and inspections required by Architect.
 - 6. Submit reports of all tests/inspections specified.
- B. Limits on Testing/Inspection Agency Authority:
 - 1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
 - 2. Agency may not approve or accept any portion of the Work.
 - 3. Agency may not assume any duties of Contractor.
 - 4. Agency has no authority to stop the Work.
- C. Contractor Responsibilities:
 - 1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
 - 2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
 - 3. Provide incidental labor and facilities:
 - a. To provide access to Work to be tested/inspected.

- b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
 - c. To facilitate tests/inspections.
 - d. To provide storage and curing of test samples.
- 4. Notify Architect and laboratory 24 hours prior to expected time for operations requiring testing/inspection services.
- 5. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
- 6. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
- D. Re-testing required because of non-conformance to specified requirements shall be performed by the same agency on instructions by Architect.
- E. Re-testing required because of non-conformance to specified requirements shall be paid for by Contractor.

3.05 MANUFACTURERS' FIELD SERVICES

- A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment as applicable, and to initiate instructions when necessary.
- B. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

3.06 DEFECT ASSESSMENT

- A. Replace Work or portions of the Work not conforming to specified requirements.

END OF SECTION

SECTION 01 7000
EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Examination, preparation, and general installation procedures.
- B. Surveying for laying out the work.
- C. Cleaning and protection.
- D. Starting of systems and equipment.
- E. Demonstration and instruction of Owner personnel.
- F. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.

1.02 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Project Record Documents: Accurately record actual locations of capped and active utilities.

1.03 PROJECT CONDITIONS

- A. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.
- B. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.
- C. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
- D. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere.
- E. Erosion and Sediment Control: Plan and execute work by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.
- F. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations.

1.04 COORDINATION

- A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- B. Notify affected utility companies and comply with their requirements.
- C. Coordinate space requirements, supports, and installation of mechanical and electrical work which are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- D. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- E. Coordinate completion and clean-up of work of separate sections.
- F. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

- A. New Materials: As specified in product sections; match existing products and work for patching and extending work.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
- B. Examine and verify specific conditions described in individual specification sections.
- C. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.
- D. Verify that utility services are available, of the correct characteristics, and in the correct locations.

3.02 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.03 LAYING OUT THE WORK

- A. Verify locations of survey control points prior to starting work.
- B. Promptly notify Architect of any discrepancies discovered.
- C. Protect survey control points prior to starting site work; preserve permanent reference points during construction.
- D. Promptly report to Architect the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
- E. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Architect.
- F. Utilize recognized engineering survey practices.
- G. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
 - 1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations.
 - 2. Grid or axis for structures.
 - 3. Building foundation, column locations, ground floor elevations.
- H. Periodically verify layouts by same means.
- I. Maintain a complete and accurate log of control and survey work as it progresses.

3.04 GENERAL INSTALLATION REQUIREMENTS

- A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- E. Make neat transitions between different surfaces, maintaining texture and appearance.

3.05 PROGRESS CLEANING

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.

- C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
- D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

3.06 PROTECTION OF INSTALLED WORK

- A. Protect installed work from damage by construction operations.
- B. Provide special protection where specified in individual specification sections.
- C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- F. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- G. Remove protective coverings when no longer needed; reuse or recycle plastic coverings if possible.

3.07 SYSTEMS STARTUP

- A. Coordinate schedule for start-up of various equipment and systems.
- B. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions which may cause damage.
- C. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.
- D. Verify that wiring and support components for equipment are complete and tested.
- E. Execute start-up under supervision of applicable Contractor personnel and manufacturer's representative in accordance with manufacturers' instructions.
- F. Submit a written report that equipment or system has been properly installed and is functioning correctly.

3.08 DEMONSTRATION AND INSTRUCTION

- A. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at scheduled time, at equipment location.
- B. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.
- C. Provide a qualified person who is knowledgeable about the Project to perform demonstration and instruction of owner personnel.

3.09 ADJUSTING

- A. Adjust operating products and equipment to ensure smooth and unhindered operation.

3.10 FINAL CLEANING

- A. Use cleaning materials that are nonhazardous.
- B. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces,
- C. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
- D. Clean filters of operating equipment.
- E. Clean debris from roofs and drainage systems.
- F. Clean site; sweep paved areas, rake clean landscaped surfaces.

- G. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

3.11 CLOSEOUT PROCEDURES

- A. Make submittals that are required by governing or other authorities.
- B. Accompany Project Coordinator on preliminary inspection to determine items to be listed for completion or correction in the Contractor's Correction Punch List for Contractor's Notice of Substantial Completion.
- C. Notify Architect when work is considered ready for Architect's Substantial Completion inspection.
- D. Conduct Substantial Completion inspection and create Final Correction Punch List containing Architect's and Contractor's comprehensive list of items identified to be completed or corrected and submit to Architect.
- E. Correct items of work listed in Final Correction Punch List and comply with requirements for access to Owner-occupied areas.
- F. Notify Architect when work is considered finally complete and ready for Architect's Substantial Completion final inspection.
- G. Complete items of work determined by Architect listed in executed Certificate of Substantial Completion.

END OF SECTION

SECTION 01 7800
CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Project Record Documents.
- B. Operation and Maintenance Data.
- C. Warranties and bonds.

1.02 RELATED REQUIREMENTS

- A. HVAC equipment shall remain wrapped in plastic and unused until start and test for building owner.
- B. Individual Product Sections: Specific requirements for operation and maintenance data.
- C. Individual Product Sections: Warranties required for specific products or Work.

1.03 SUBMITTALS

- A. Project Record Documents: Submit documents to Architect with claim for final Application for Payment.
- B. Operation and Maintenance Data:
 - 1. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
 - 2. Submit 1 copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Architect comments. Revise content of all document sets as required prior to final submission.
 - 3. Submit two sets of revised final documents in final form within 10 days after final inspection.
- C. Warranties and Bonds:
 - 1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within ten days after acceptance.
 - 2. Make other submittals within ten days after Date of Substantial Completion, prior to final Application for Payment.
 - 3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within ten days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
 - 1. Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change Orders and other modifications to the Contract.
 - 5. Reviewed shop drawings, product data, and samples.
 - 6. Manufacturer's instruction for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress.
- E. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
 - 1. Field changes of dimension and detail.

3.02 OPERATION AND MAINTENANCE DATA

- A. Source Data: For each product or system, list names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
- B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
- D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

3.03 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES

- A. For Each Product, Applied Material, and Finish:
 - 1. Product data, with catalog number, size, composition, and color and texture designations.
 - 2. Information for re-ordering custom manufactured products.
- B. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.
- C. Moisture protection and weather-exposed products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.
- D. Additional information as specified in individual product specification sections.
- E. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.
- F. Provide a listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

3.04 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS

- A. For Each Item of Equipment and Each System:
 - 1. Description of unit or system, and component parts.
 - 2. Identify function, normal operating characteristics, and limiting conditions.
 - 3. Include performance curves, with engineering data and tests.
 - 4. Complete nomenclature and model number of replaceable parts.
- B. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.
- C. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
- D. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- E. Provide servicing and lubrication schedule, and list of lubricants required.
- F. Include manufacturer's printed operation and maintenance instructions.
- G. Include sequence of operation by controls manufacturer.
- H. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- I. Provide control diagrams by controls manufacturer as installed.
- J. Provide Contractor's coordination drawings, with color coded piping diagrams as installed.

- K. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- L. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- M. Include test and balancing reports.
- N. Additional Requirements: As specified in individual product specification sections.

3.05 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS

- A. Assemble operation and maintenance data into durable manuals for Owner's personnel use, with data arranged in the same sequence as, and identified by, the specification sections.
- B. Where systems involve more than one specification section, provide separate tabbed divider for each system.
- C. Prepare instructions and data by personnel experienced in maintenance and operation of described products.
- D. Prepare data in the form of an instructional manual.
- E. Binders: Commercial quality, 8-1/2 x 11 inch (216 x 280 mm) three D side ring binders with durable plastic covers; 2 inch (50 mm) maximum ring size. When multiple binders are used, correlate data into related consistent groupings.
- F. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.
- G. Project Directory: Title and address of Project; names, addresses, and telephone numbers of Architect, Consultants, Contractor and subcontractors, with names of responsible parties.
- H. Tables of Contents: List every item separated by a divider, using the same identification as on the divider tab; where multiple volumes are required, include all volumes Tables of Contents in each volume, with the current volume clearly identified.
- I. Dividers: Provide tabbed dividers for each separate product and system; identify the contents on the divider tab; immediately following the divider tab include a description of product and major component parts of equipment.
- J. Text: Manufacturer's printed data, or typewritten data on 24 pound paper.
- K. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
- L. Arrange content by systems under section numbers and sequence of Table of Contents of this Project Manual.
- M. Contents: Prepare a Table of Contents for each volume, with each product or system description identified, in three parts as follows:
 - 1. Part 1: Directory, listing names, addresses, and telephone numbers of Architect, Contractor, Subcontractors, and major equipment suppliers.
 - 2. Part 2: Operation and maintenance instructions, arranged by system and subdivided by specification section. For each category, identify names, addresses, and telephone numbers of Subcontractors and suppliers. Identify the following:
 - a. Significant design criteria.
 - b. List of equipment.
 - c. Parts list for each component.
 - d. Operating instructions.
 - e. Maintenance instructions for equipment and systems.
 - f. Maintenance instructions for special finishes, including recommended cleaning methods and materials, and special precautions identifying detrimental agents.
 - 3. Part 3: Project documents and certificates, including the following:
 - a. Shop drawings and product data.

- N. Provide a listing in Table of Contents for design data, with tabbed dividers and space for insertion of data.
- O. Table of Contents: Provide title of Project; names, addresses, and telephone numbers of Architect, Consultants, and Contractor with name of responsible parties; schedule of products and systems, indexed to content of the volume.

3.06 WARRANTIES AND BONDS

- A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial completion is determined.
- B. Verify that documents are in proper form, contain full information, and are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.
- E. Manual: Bind in commercial quality 8-1/2 x 11 inch (216 x 279 mm) three D side ring binders with durable plastic covers.
- F. Cover: Identify each binder with typed or printed title WARRANTIES AND BONDS, with title of Project; name, address and telephone number of Contractor and equipment supplier; and name of responsible company principal.
- G. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification section in which specified, and the name of product or work item.
- H. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

END OF SECTION

SECTION 03 2000
CONCRETE REINFORCING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Reinforcing steel for cast-in-place concrete.
- B. Supports and accessories for steel reinforcement.

1.02 PRICE AND PAYMENT PROCEDURES

- A. See Section 01 2200 - Unit Prices, for additional unit price requirements.
- B. Bar Reinforcement: By the ton (metric ton). Includes reinforcement, placement, and accessories.

1.03 REFERENCE STANDARDS

- A. ACI 301 - Specifications for Structural Concrete; American Concrete Institute International; 2010 (Errata 2012).
- B. ACI 318 - Building Code Requirements For Structural Concrete and Commentary; American Concrete Institute International; 2011.
- C. ACI SP-66 - ACI Detailing Manual; American Concrete Institute International; 2004.
- D. ASTM A82/A82M - Standard Specification for Steel Wire, Plain, for Concrete Reinforcement; 2007.
- E. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement; 2015.
- F. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete; 2015.
- G. CRSI (DA4) - Manual of Standard Practice; Concrete Reinforcing Steel Institute; 2009.
- H. CRSI (P1) - Placing Reinforcing Bars; Concrete Reinforcing Steel Institute; 2011.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Comply with requirements of ACI SP-66. Include bar schedules, shapes of bent bars, spacing of bars, and location of splices.
- C. Manufacturer's Certificate: Certify that reinforcing steel and accessories supplied for this project meet or exceed specified requirements.
- D. Reports: Submit certified copies of mill test report of reinforcement materials analysis.

1.05 QUALITY ASSURANCE

- A. Perform work of this section in accordance with CRSI (DA4), CRSI (P1), ACI 301, ACI SP-66, and ACI 318.
 - 1. Maintain one copy of each document on project site.

PART 2 PRODUCTS

2.01 REINFORCEMENT

- A. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi) (420 MPa).
 - 1. Deformed billet-steel bars.
 - 2. Unfinished.
- B. Stirrup Steel: ASTM A1064/A1064M steel wire, unfinished.
- C. Reinforcement Accessories:
 - 1. Tie Wire: Annealed, minimum 16 gage, 0.0508 inch (1.29 mm).
 - 2. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement.
 - 3. Provide stainless steel or galvanized components for placement within 1-1/2 inches (38 mm) of weathering surfaces.

2.02 FABRICATION

- A. Fabricate concrete reinforcing in accordance with CRSI (DA4) - Manual of Standard Practice.
- B. Welding of reinforcement is not permitted.
- C. Locate reinforcing splices not indicated on drawings at point of minimum stress.

PART 3 EXECUTION

3.01 PLACEMENT

- A. Place, support and secure reinforcement against displacement. Do not deviate from required position.
- B. Do not displace or damage vapor barrier.
- C. Accommodate placement of formed openings.
- D. Maintain concrete cover around reinforcing as follows:
 - 1. Supported Slabs and Joists: 1 1/2 inch
 - 2. Walls (exposed to weather or backfill): 1 1/2" inch
 - 3. Footings and Concrete Formed Against Earth: 3 inch.
- E. Conform to applicable code for concrete cover over reinforcement.

3.02 FIELD QUALITY CONTROL

- A. An independent testing agency, as specified in Section 01 4000, will inspect installed reinforcement for conformance to contract documents before concrete placement.

END OF SECTION

SECTION 03 3000
CAST-IN-PLACE CONCRETE

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Concrete formwork.
- B. Floors and slabs on grade.
- C. Concrete reinforcement.
- D. Joint devices associated with concrete work.
- E. Concrete curing.

1.02 RELATED REQUIREMENTS

- A. Section 03 3511 - Concrete Floor Finishes: Densifiers, hardeners, applied coatings, and polishing.
- B. Section 07 9200 - Joint Sealants: Products and installation for sealants for saw cut joints and isolation joints in slabs.

1.03 REFERENCE STANDARDS

- A. ACI 117 - Standard Specifications for Tolerances for Concrete Construction and Materials; American Concrete Institute International; 2010.
- B. ACI 211.1 - Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete; American Concrete Institute International; 1991 (Reapproved 2009).
- C. ACI 211.2 - Standard Practice for Selecting Proportions for Structural Lightweight Concrete; American Concrete Institute International; 1998 (Reapproved 2004).
- D. ACI 301 - Specifications for Structural Concrete; American Concrete Institute International; 2010 (Errata 2012).
- E. ACI 302.1R - Guide for Concrete Floor and Slab Construction; American Concrete Institute International; 2004 (Errata 2007).
- F. ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete; American Concrete Institute International; 2000.
- G. ACI 305R - Hot Weather Concreting; American Concrete Institute International; 2010.
- H. ACI 306R - Cold Weather Concreting; American Concrete Institute International; 2010.
- I. ACI 308R - Guide to Curing Concrete; American Concrete Institute International; 2001 (Reapproved 2008).
- J. ACI 318 - Building Code Requirements for Structural Concrete and Commentary; American Concrete Institute International; 2011.
- K. ACI 347 - Guide to Formwork for Concrete; American Concrete Institute International; 2004.
- L. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon Billet-Steel Bars for Concrete Reinforcement; 2015.
- M. ASTM C33/C33M - Standard Specification for Concrete Aggregates; 2013.
- N. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens; 2014.
- O. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete; 2014.
- P. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic-Cement Concrete; 2012.
- Q. ASTM C150/C150M - Standard Specification for Portland Cement; 2012.
- R. ASTM C171 - Standard Specification for Sheet Materials for Curing Concrete; 2007.
- S. ASTM C173/C173M - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method; 2014.
- T. ASTM C260/C260M - Standard Specification for Air-Entraining Admixtures for Concrete; 2010a.

- U. ASTM C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete; 2011.
- W. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete; 2013.
- X. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete; 2012.
- Y. ASTM C685/C685M - Standard Specification for Concrete Made by Volumetric Batching and Continuous Mixing; 2014.
- Z. ASTM C881/C881M - Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete; 2013.
- AA. ASTM C979/C979M - Standard Specification for Pigments for Integrally Colored Concrete; 2010.
- AB. ASTM C1059/C1059M - Standard Specification for Latex Agents for Bonding Fresh to Hardened Concrete; 2013.
- AC. ASTM C1107/C1107M - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink); 2014.
- AD. ASTM C1240 - Standard Specification for Silica Fume Used in Cementitious Mixtures; 2014.
- AE. ASTM C1315 - Standard Specification for Liquid Membrane-Forming Compounds Having Special Properties for Curing and Sealing Concrete; 2011.
- AF. ASTM D994/D994M - Standard Specification for Preformed Expansion Joint Filler for Concrete (Bituminous Type); 2011.
- AG. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types); 2004 (Reapproved 2013).
- AH. ASTM D1752 - Standard Specification for Preformed Sponge Rubber Cork and Recycled PVC Expansion Joint Fillers for Concrete Paving and Structural Construction; 2004a (Reapproved 2013).
- AI. ASTM D2103 - Standard Specification for Polyethylene Film and Sheeting; 2010.
- AJ. ASTM E1155 - Standard Test Method for Determining F(F) Floor Flatness and F(L) Floor Levelness Numbers; 1996 (Reapproved 2008).
- AK. ASTM E1745 - Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs; 2011.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Submit manufacturers' data on manufactured products showing compliance with specified requirements and installation instructions.
 - 1. For curing compounds, provide data on method of removal in the event of incompatibility with floor covering adhesives.
- C. Samples for Pigment Color Selection: Submit manufacturer's complete sample chip set, including pigment number and required dosage rate for each color.
- D. Verification Samples: Submit sample chips of specified colors indicating pigment numbers and required dosage rates, for subsequent comparison to installed concrete.
- E. Samples: Submit samples of underslab vapor retarder to be used.
- F. Manufacturer's Installation Instructions: For concrete accessories, indicate installation procedures and interface required with adjacent construction.
- G. Project Record Documents: Accurately record actual locations of embedded utilities and components that will be concealed from view upon completion of concrete work.

1.05 QUALITY ASSURANCE

- A. Perform work of this section in accordance with ACI 301 and ACI 318.
 - 1. Maintain one copy of each document on site.
- B. Follow recommendations of ACI 305R when concreting during hot weather.

- C. Follow recommendations of ACI 306R when concreting during cold weather.

PART 2 PRODUCTS

2.01 FORMWORK

- A. Formwork Design and Construction: Comply with guidelines of ACI 347 to provide formwork that will produce concrete complying with tolerances of ACI 117.
- B. Form Materials: Contractor's choice of standard products with sufficient strength to withstand hydrostatic head without distortion in excess of permitted tolerances.
 - 1. Form Facing for Exposed Finish Concrete: Contractor's choice of materials that will provide smooth, stain-free final appearance.
 - 2. Earth Cuts: Do not use earth cuts as forms for vertical surfaces. Natural rock formations that maintain a stable vertical edge may be used as side forms.
 - 3. Form Coating: Release agent that will not adversely affect concrete or interfere with application of coatings.
 - 4. Form Ties: Cone snap type that will leave no metal within 1-1/2 inches (38 mm) of concrete surface.

2.02 REINFORCEMENT

- A. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi) (420 MPa).
 - 1. Type: Deformed billet-steel bars.
 - 2. Finish: Unfinished.
- B. Reinforcement Accessories:
 - 1. Tie Wire: Annealed, minimum 16 gage, 0.0508 inch (1.29 mm).
 - 2. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement.
 - 3. Provide galvanized components for placement within 1-1/2 inches (38 mm) of weathering surfaces.

2.03 CONCRETE MATERIALS

- A. Cement: ASTM C 150, Type I - Normal and Type IIA -air entraining Portland type.
 - 1. Acquire all cement for entire project from same source.
- B. Fine and Coarse Aggregates: ASTM C 33.
 - 1. Acquire all aggregates for entire project from same source.
- C. Fly Ash: ASTM C618, Class C or F.
- D. Calcined Pozzolan: ASTM C618, Class N.
- E. Silica Fume: ASTM C1240, proportioned in accordance with ACI 211.1.
- F. Water: Clean and not detrimental to concrete.

2.04 ADMIXTURES

- A. Do not use chemicals that will result in soluble chloride ions in excess of 0.1 percent by weight of cement.
- B. Air Entrainment Admixture: ASTM C260/C260M.
- C. High Range Water Reducing and Retarding Admixture: ASTM C494/C494M Type G.
- D. High Range Water Reducing Admixture: ASTM C494/C494M Type F.
- E. Water Reducing and Accelerating Admixture: ASTM C494/C494M Type E.
- F. Water Reducing and Retarding Admixture: ASTM C494/C494M Type D.
- G. Accelerating Admixture: ASTM C494/C494M Type C.
- H. Retarding Admixture: ASTM C494/C494M Type B.
- I. Water Reducing Admixture: ASTM C494/C494M Type A.

2.05 ACCESSORY MATERIALS

- A. Underslab Vapor Retarder: 6 mil poly. See construction drawings for more information.

2.06 BONDING AND JOINTING PRODUCTS

- A. Latex Bonding Agent: Non-redispersable acrylic latex, complying with ASTM C1059/C1059M, Type II.

1. Products:
 - a. W.R. Meadows, Inc.; ACRY-LOK-: www.wrmeadows.com.
- B. Epoxy Bonding System:
- C. Slab Isolation Joint Filler: 1/2 inch (13 mm) thick, height equal to slab thickness, with removable top section that will form 1/2 inch (13 mm) deep sealant pocket after removal.
 1. Material: ASTM D1751, cellulose fiber.
- D. Slab Construction Joint Devices: Combination keyed joint form and screed, galvanized steel, with minimum 1 inch (25 mm) diameter holes for conduit or rebars to pass through at 6 inches (150 mm) on center; ribbed steel stakes for setting.

2.07 CURING MATERIALS

- A. Evaporation Reducer: Liquid thin-film-forming compound that reduces rapid moisture loss caused by high temperature, low humidity, and high winds; intended for application immediately after concrete placement.
 1. Products:
 - a. W.R. Meadows, Inc; Evapre or Evapre-RTU: www.wrmeadows.com.
- B. Polyethylene Film: ASTM D2103, 6 mil (0.15 mm) thick, clear.
- C. Water: Potable, not detrimental to concrete.

2.08 CONCRETE MIX DESIGN

- A. Proportioning Normal Weight Concrete: Comply with ACI 211.1 recommendations.
 1. Replace as much Portland cement as possible with fly ash, ground granulated blast furnace slag, silica fume, or rice hull ash as is consistent with ACI recommendations.
- B. Proportioning Structural Lightweight Concrete: Comply with ACI 211.2 recommendations.
- C. Concrete Strength: Establish required average strength for each type of concrete on the basis of field experience or trial mixtures, as specified in ACI 301.
 1. For trial mixtures method, employ independent testing agency acceptable to Architect for preparing and reporting proposed mix designs.
- D. Admixtures: Add acceptable admixtures as recommended in ACI 211.1 and at rates recommended or required by manufacturer.
- E. Normal Weight Concrete:
 1. Fly Ash Content: Maximum 25 percent of cementitious materials by weight.
 2. Calcined Pozzolan Content: Maximum 20 percent of cementitious materials by weight.
 3. Silica Fume Content: Maximum 15 percent of cementitious materials by weight.
 4. Water-Cement Ratio: Maximum 45 percent by weight.
 5. Total Air Content: 6 percent, determined in accordance with ASTM C173/C173M.
 6. Maximum Slump: 4 inches (100 mm).
 7. Maximum Aggregate Size: 3/4 inch (19 mm).

2.09 MIXING

- A. Transit Mixers: Comply with ASTM C94/C94M.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify lines, levels, and dimensions before proceeding with work of this section.

3.02 PREPARATION

- A. Formwork: Comply with requirements of ACI 301. Design and fabricate forms to support all applied loads until concrete is cured, and for easy removal without damage to concrete.
- B. Verify that forms are clean and free of rust before applying release agent.
- C. Coordinate placement of embedded items with erection of concrete formwork and placement of form accessories.
- D. Where new concrete is to be bonded to previously placed concrete, prepare existing surface by cleaning with steel brush and applying bonding agent in accordance with manufacturer's instructions.
 1. Use epoxy bonding system for bonding to damp surfaces, for structural load-bearing applications, and where curing under humid conditions is required.

2. Use latex bonding agent only for non-load-bearing applications.
- E. Where new concrete with integral waterproofing is to be bonded to previously placed concrete, prepare surfaces to be treated in accordance with waterproofing manufacturer's instructions. Saturate cold joint surface with clean water, and remove excess water before application of coat of waterproofing admixture slurry. Apply slurry coat uniformly with semi-stiff bristle brush at rate recommended by waterproofing manufacturer.
- F. In locations where new concrete is doweled to existing work, drill holes in existing concrete, insert steel dowels and pack solid with non-shrink grout.
- G. Interior Slabs on Grade: Install vapor retarder under interior slabs on grade. Lap joints minimum 6 inches (150 mm). Seal joints, seams and penetrations watertight with manufacturer's recommended products and follow manufacturer's written instructions. Repair damaged vapor retarder before covering.
 1. Vapor Retarder Over Granular Fill: Install compactible granular fill before placing vapor retarder as shown on the drawings.

3.03 INSTALLING REINFORCEMENT AND OTHER EMBEDDED ITEMS

- A. Comply with requirements of ACI 301. Clean reinforcement of loose rust and mill scale, and accurately position, support, and secure in place to achieve not less than minimum concrete coverage required for protection.
- B. Install welded wire reinforcement in maximum possible lengths, and offset end laps in both directions. Splice laps with tie wire.
- C. Verify that anchors, seats, plates, reinforcement and other items to be cast into concrete are accurately placed, positioned securely, and will not interfere with concrete placement.

3.04 PLACING CONCRETE

- A. Place concrete in accordance with ACI 304R.
- B. Place concrete for floor slabs in accordance with ACI 302.1R.
- C. Notify Architect not less than 24 hours prior to commencement of placement operations.
- D. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.
- E. Ensure reinforcement and waterstops will not be disturbed during concrete placement.
- F. Place concrete continuously without construction (cold) joints wherever possible; where construction joints are necessary, before next placement prepare joint surface by removing laitance and exposing the sand and sound surface mortar, by sandblasting or high-pressure water jetting.
- G. Finish floors level and flat, unless otherwise indicated, within the tolerances specified below.

3.05 SLAB JOINTING

- A. Locate joints as indicated on the drawings.
- B. Anchor joint fillers and devices to prevent movement during concrete placement.
- C. Isolation Joints: Use preformed joint filler with removable top section for joint sealant, total height equal to thickness of slab, set flush with top of slab.
 1. Install wherever necessary to separate slab from other building members, including columns, walls, equipment foundations, footings, stairs, manholes, sumps, and drains.
- D. Load Transfer Construction and Contraction Joints: Install load transfer devices as indicated; saw cut joint at surface as indicated for contraction joints.
- E. Saw Cut Contraction Joints: Saw cut joints before concrete begins to cool, within 4 to 12 hours after placing; use 3/16 inch (5 mm) thick blade and cut at least 1 inch (25 mm) deep but not less than one quarter (1/4) the depth of the slab.
- F. Construction Joints: Where not otherwise indicated, use metal combination screed and key form, with removable top section for joint sealant.

3.06 FLOOR FLATNESS AND LEVELNESS TOLERANCES

- A. An independent testing agency, as specified in Section 01 4000, will inspect finished slabs for conformance to specified tolerances.

- B. Maximum Variation of Surface Flatness:
 - 1. Exposed Concrete Floors: 1/8 inch (3 mm) in 10 ft (3 m).
 - 2. Under Seamless Resilient Flooring: 1/8 inch (3 mm) in 10 ft (3 m).
 - 3. Under Carpeting: 1/8 inch (3 mm) in 10 ft (3 m).
- C. Correct the slab surface if tolerances are less than specified.
- D. Correct defects by grinding or by removal and replacement of the defective work. Areas requiring corrective work will be identified. Re-measure corrected areas by the same process.

3.07 CONCRETE FINISHING

- A. Repair surface defects, including tie holes, immediately after removing formwork.
- B. Unexposed Form Finish: Rub down or chip off fins or other raised areas 1/4 inch (6 mm) or more in height.
- C. Exposed Form Finish: Rub down or chip off and smooth fins or other raised areas 1/4 inch (6 mm) or more in height. Provide finish as follows:
 - 1. Smooth Rubbed Finish: Wet concrete and rub with carborundum brick or other abrasive, not more than 24 hours after form removal.
- D. Concrete Slabs: Finish to requirements of ACI 302.1R, and as follows:
 - 1. Decorative Exposed Surfaces: Trowel as described in ACI 302.1R; use steel-reinforced plastic trowel blades instead of steel blades to avoid black-burnish marks; decorative exposed surfaces include surfaces to be stained or dyed, pigmented concrete, surfaces to receive liquid hardeners, surfaces to receive dry-shake hardeners, surfaces to be polished, and all other exposed slab surfaces.
- E. In areas with floor drains, maintain floor elevation at walls; pitch surfaces uniformly to drains at 1:50 nominal.

3.08 CURING AND PROTECTION

- A. Comply with requirements of ACI 308R. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
- B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
 - 1. Normal concrete: Not less than 7 days.
 - 2. High early strength concrete: Not less than 4 days.
- C. Formed Surfaces: Cure by moist curing with forms in place for full curing period.
- D. Surfaces Not in Contact with Forms:
 - 1. Initial Curing: Start as soon as free water has disappeared and before surface is dry. Keep continuously moist for not less than three days by water ponding.
 - a. Ponding: Maintain 100 percent coverage of water over floor slab areas, continuously for 4 days.
 - b. Spraying: Spray water over floor slab areas and maintain wet.
 - 2. Final Curing: Begin after initial curing but before surface is dry.
 - a. Moisture-Retaining Sheet: Lap strips not less than 3 inches (75 mm) and seal with waterproof tape or adhesive; secure at edges.
 - b. Curing Compound: Apply in two coats at right angles, using application rate recommended by manufacturer.

3.09 FIELD QUALITY CONTROL

- A. An independent testing agency will perform field quality control tests, as specified in Section 01 4000.
- B. Provide free access to concrete operations at project site and cooperate with appointed firm.
- C. Submit proposed mix design of each class of concrete to inspection and testing firm for review prior to commencement of concrete operations.
- D. Tests of concrete and concrete materials may be performed at any time to ensure conformance with specified requirements.

- E. Compressive Strength Tests: ASTM C39/C39M. For each test, mold and cure three concrete test cylinders. Obtain test samples for every 100 cu yd (76 cu m) or less of each class of concrete placed.
- F. Take one additional test cylinder during cold weather concreting, cured on job site under same conditions as concrete it represents.
- G. Perform one slump test for each set of test cylinders taken, following procedures of ASTM C143/C143M.

3.10 DEFECTIVE CONCRETE

- A. Test Results: The testing agency shall report test results in writing to Architect and Contractor within 24 hours of test.
- B. Defective Concrete: Concrete not conforming to required lines, details, dimensions, tolerances or specified requirements.
- C. Repair or replacement of defective concrete will be determined by the Architect. The cost of additional testing shall be borne by Contractor when defective concrete is identified.
- D. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Architect for each individual area.

3.11 PROTECTION

- A. Do not permit traffic over unprotected concrete floor surface until fully cured.

END OF SECTION

SECTION 04 2000
UNIT MASONRY

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Concrete Block.
- B. Mortar and Grout.
- C. Reinforcement and Anchorage.
- D. Flashings.
- E. Accessories.

1.02 REFERENCE STANDARDS

- A. ACI 530/530.1/ERTA - Building Code Requirements and Specification for Masonry Structures and Related Commentaries; American Concrete Institute International; 2011.
- B. ASTM A36/A36M - Standard Specification for Carbon Structural Steel; 2014.
- C. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2009.
- D. ASTM A580/A580M - Standard Specification for Stainless Steel Wire; 2015.
- E. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon Steel Bars for Concrete Reinforcement; 2015.
- F. ASTM A641/A641M - Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire; 2009a.
- G. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.
- H. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2015.
- I. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete; 2015.
- J. ASTM C90 - Standard Specification for Loadbearing Concrete Masonry Units; 2014.
- K. ASTM C91/C91M - Standard Specification for Masonry Cement; 2012.
- L. ASTM C129 - Standard Specification for Nonloadbearing Concrete Masonry Units; 2011.
- M. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar; 2011.
- N. ASTM C150/C150M - Standard Specification for Portland Cement; 2012.
- O. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes; 2006 (Reapproved 2011).
- P. ASTM C270 - Standard Specification for Mortar for Unit Masonry; 2014a.
- Q. ASTM C404 - Standard Specification for Aggregates for Masonry Grout; 2011.
- R. ASTM C476 - Standard Specification for Grout for Masonry; 2010.
- S. ASTM C1148 - Standard Test Method for Measuring the Drying Shrinkage of Masonry Mortar; 1992a (Reapproved 2008).
- T. ASTM C1314 - Standard Test Method for Compressive Strength of Masonry Prisms; 2012.
- U. ASTM C1357 - Standard Test Methods for Evaluating Masonry Bond Strength; 2009.
- V. ASTM D4637/D4637M - Standard Specification for EPDM Sheet Used in Single-Ply Roof Membrane; 2013.
- W. ASTM E514/E514M - Standard Test Method for Water Penetration and Leakage Through Masonry; 2014.
- X. UL (FRD) - Fire Resistance Directory; Underwriters Laboratories Inc.; current edition.

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of this section; require attendance by all relevant installers.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data for masonry units, fabricated wire reinforcement, mortar, and masonry accessories.
- C. Manufacturer's Certificate: Certify that water repellent admixture manufacturer has certified masonry unit manufacturer as an approved user of water repellent admixture in the manufacture of concrete block.
- D. Test Reports: Concrete masonry manufacturer's test reports for units with integral water repellent admixture.

1.05 QUALITY ASSURANCE

- A. Comply with provisions of ACI 530/530.1/ERTA, except where exceeded by requirements of the contract documents.
 - 1. Maintain one copy of each document on project site.
- B. Fire Rated Assemblies: Conform to applicable code for 2 hour rating requirements for fire rated masonry construction.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, handle, and store masonry units by means that will prevent mechanical damage and contamination by other materials.

PART 2 PRODUCTS

2.01 CONCRETE MASONRY UNITS

- A. Concrete Block: Comply with referenced standards and as follows:
 - 1. Size: Standard units with nominal face dimensions of 16 x 8 inches (400 x 200 mm) and nominal depths as indicated on the drawings for specific locations.
 - 2. Special Shapes: Provide non-standard blocks configured for corners.
 - 3. Load-Bearing Units: ASTM C90, normal weight.
 - a. Hollow block, as indicated.
 - b. Exposed Faces: Manufacturer's standard color and texture.
 - 4. Non-Loadbearing Units: ASTM C129.
 - a. Hollow block.
 - b. Medium weight.
 - 5. Units with Integral Water Repellent: Concrete block units as specified in this section with polymeric liquid admixture added to concrete masonry units at the time of manufacture.
 - a. Performance of Units with Integral Water Repellent:
 - 1) Water Permeance: When tested per ASTM E514/E514M and for a minimum of 72 hours.
 - (a) No water visible on back of wall above flashing at the end of 24 hours.
 - (b) No flow of water from flashing equal to or greater than 0.032 gallons per hour (0.05 L per hour) at the end of 24 hours.
 - (c) No more than 25% of wall area above flashing visibly damp at end of test.
 - 2) Flexural Bond Strength: ASTM C1357; minimum 10% increase.
 - 3) Compressive Strength: ASTM C1314; maximum 5% decrease.
 - 4) Drying Shrinkage: ASTM C1148; maximum 5% increase in shrinkage.
 - b. Use only in combination with mortar and grout that also has integral water repellent admixture.
 - c. Use water repellent admixtures for masonry units, mortar and grout by a single manufacturer.

2.02 MORTAR AND GROUT MATERIALS

- A. Masonry Cement: ASTM C91/C91M, Type N, S, M or as indicated.
- B. Portland Cement: ASTM C150/C150M, Type I.
 - 1. Not more than 0.60 percent alkali.
- C. Hydrated Lime: ASTM C207, Type S.

- D. Mortar Aggregate: ASTM C144.
- E. Grout Aggregate: ASTM C404.
- F. Water: Clean and potable.
- G. Accelerating Admixture: Nonchloride type for use in cold weather.
- H. Moisture-Resistant Admixture: Water repellent compound designed to reduce capillarity.
- I. Integral Water Repellent Admixture for Mortar and Grout: Polymeric liquid admixture added to mortar and grout at the time of manufacture.
 - 1. Use only in combination with masonry units manufactured with integral water repellent admixture.
 - 2. Use only water repellent admixture for mortar and grout from the same manufacturer as water repellent admixture in masonry units.
 - 3. Meet or exceed performance specified for water repellent admixture used in masonry units.

2.03 REINFORCEMENT AND ANCHORAGE

- A. Reinforcing Steel: Type specified in Section 03 2000; size as indicated on drawings; uncoated finish.
- B. Joint Reinforcement: Use ladder type joint reinforcement where vertical reinforcement is involved and truss type elsewhere, unless otherwise indicated.
- C. Single Wythe Joint Reinforcement: Truss or ladder type; ASTM A1064/A1064M steel wire, mill galvanized to ASTM A641/A641M, Class 3; 0.1483 inch (3.8 mm) side rods with 0.1483 inch (3.8 mm) cross rods; width as required to provide not more than 1 inch (25 mm) and not less than 1/2 inch (13 mm) of mortar coverage on each exposure.
- D. Flexible Anchors: 2-piece anchors that permit differential movement between masonry and building frame, sized to provide not more than 1 inch (25 mm) and not less than 1/2 inch (13 mm) of mortar coverage from masonry face.

2.04 FLASHINGS

- A. Plastic Flashings: Sheet polyvinyl chloride; 40 mil (1mm) thick.
- B. EPDM Flashing: ASTM D4637, Type I, 0.040 inch (1.0 mm) thick.

2.05 ACCESSORIES

- A. Preformed Control Joints: Rubber material. Provide with corner and tee accessories, fused joints.
- B. Joint Filler: Closed cell polyvinyl chloride; oversized 50 percent to joint width; self expanding; 1/2 inch wide x by maximum lengths available.
- C. Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials.

2.06 MORTAR AND GROUT MIXES

- A. Mortar for Unit Masonry: ASTM C270, using the Proportion Specification.
- B. Grout: ASTM C476; consistency required to fill completely volumes indicated for grouting; fine grout for spaces with smallest horizontal dimension of 2 inches (50 mm) or less; coarse grout for spaces with smallest horizontal dimension greater than 2 inches (50 mm).
- C. Admixtures: Add to mixture at manufacturer's recommended rate and in accordance with manufacturer's instructions; mix uniformly.
- D. Mixing: Use mechanical batch mixer and comply with referenced standards.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive masonry.
- B. Verify that related items provided under other sections are properly sized and located.
- C. Verify that built-in items are in proper location, and ready for roughing into masonry work.

3.02 PREPARATION

- A. Direct and coordinate placement of metal anchors supplied for installation under other sections.

- B. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.

3.03 COLD AND HOT WEATHER REQUIREMENTS

- A. Comply with requirements of ACI 530/530.1/ERTA or applicable building code, whichever is more stringent.

3.04 COURSING

- A. Establish lines, levels, and coursing indicated. Protect from displacement.
- B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.
- C. Concrete Masonry Units:
 - 1. Bond: Running.
 - 2. Coursing: One unit and one mortar joint to equal 8 inches (200 mm).
 - 3. Mortar Joints: Concave.

3.05 PLACING AND BONDING

- A. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.
- B. Lay hollow masonry units with face shell bedding on head and bed joints.
- C. Buttering corners of joints or excessive furrowing of mortar joints is not permitted.
- D. Remove excess mortar and mortar smears as work progresses.
- E. Remove excess mortar with water repellent admixture promptly. Do not use acids, sandblasting or high pressure cleaning methods.
- F. Interlock intersections and external corners.
- G. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.
- H. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.
- I. Cut mortar joints flush where wall tile is scheduled or resilient base is scheduled.
- J. Isolate masonry partitions from vertical structural framing members with a control joint.
- K. Isolate top joint of masonry partitions from horizontal structural framing members and slabs or decks with compressible joint filler.

3.06 REINFORCEMENT AND ANCHORAGE - GENERAL

- A. Unless otherwise indicated on drawings or specified under specific wall type, install horizontal joint reinforcement 16 inches (400 mm) on center.
- B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches (400 mm) each side of opening.
- C. Place continuous joint reinforcement in first and second joint below top of walls.
- D. Lap joint reinforcement ends minimum 6 inches (150 mm).
- E. Reinforce stack bonded unit joint corners and intersections with strap anchors 16 inches (400 mm) on center.
- F. Fasten anchors to structural framing and embed in masonry joints as masonry is laid. Unless otherwise indicated on drawings or closer spacing is indicated under specific wall type, space anchors at maximum of 36 inches (900 mm) horizontally and 24 inches (600 mm) vertically.

3.07 MASONRY FLASHINGS

- A. Whether or not specifically indicated, install masonry flashing to divert water to exterior at all locations where downward flow of water will be interrupted.
 - 1. Extend flashings full width at such interruptions and at least 6 inches (152 mm) into adjacent masonry or turn up at least 8 inches (203 mm) to form watertight pan at non-masonry construction.
 - 2. Remove or cover protrusions or sharp edges that could puncture flashings.
 - 3. Seal lapped ends and penetrations of flashing before covering with mortar.

- B. Extend plastic, laminated, and EPDM flashings to within 1/4 inch (6 mm) of exterior face of masonry.
- C. Lap end joints of flashings at least 6 inches (152 mm) and seal watertight with flashing sealant/adhesive.

3.08 GROUTED COMPONENTS

- A. Reinforce bond beams with 2, No 4 (M____) bars, 1 inch (25 mm) from bottom web.
- B. Reinforce with #4 verticals 48" oc and at jambs and corners.
- C. Lap splices minimum 48 bar diameters.
- D. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch (13 mm) of dimensioned position.
- E. Place and consolidate grout fill without displacing reinforcing.
- F. At bearing locations, fill masonry cores with grout for a minimum 12 inches (300 mm) either side of opening.

3.09 CONTROL AND EXPANSION JOINTS

- A. Do not continue horizontal joint reinforcement through control or expansion joints.
- B. Install preformed control joint device in continuous lengths. Seal butt and corner joints in accordance with manufacturer's instructions.
- C. Size control joints as indicated on drawings; if not shown, 3/4 inch (19 mm) wide and deep.

3.10 BUILT-IN WORK

- A. As work progresses, install built-in metal door frames and other items to be built into the work and furnished under other sections.
- B. Install built-in items plumb, level, and true to line.
- C. Bed anchors of metal door frames in adjacent mortar joints. Fill frame voids solid with grout.
 - 1. Fill adjacent masonry cores with grout minimum 12 inches (300 mm) from framed openings.
- D. Do not build into masonry construction organic materials that are subject to deterioration.

3.11 TOLERANCES

- A. Maximum Variation from Alignment of Columns: 1/4 inch (6 mm).
- B. Maximum Variation From Unit to Adjacent Unit: 1/16 inch (1.6 mm).
- C. Maximum Variation from Plane of Wall: 1/4 inch in 10 ft (6 mm/3 m) and 1/2 inch in 20 ft (13 mm/6 m) or more.
- D. Maximum Variation from Plumb: 1/4 inch (6 mm) per story non-cumulative; 1/2 inch (13 mm) in two stories or more.
- E. Maximum Variation from Level Coursing: 1/8 inch in 3 ft (3 mm/m) and 1/4 inch in 10 ft (6 mm/3 m); 1/2 inch in 30 ft (13 mm/9 m).
- F. Maximum Variation of Mortar Joint Thickness: Head joint, minus 1/4 inch, plus 3/8 inch (minus 6.4 mm, plus 9.5 mm).
- G. Maximum Variation from Cross Sectional Thickness of Walls: 1/4 inch (6 mm).

3.12 CUTTING AND FITTING

- A. Cut and fit for chases. Coordinate with other sections of work to provide correct size, shape, and location.
- B. Obtain approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

3.13 FIELD QUALITY CONTROL

- A. An independent testing agency will perform field quality control tests, as specified in Section 01 4000 - Quality Requirements.

3.14 CLEANING

- A. Remove excess mortar and mortar droppings.
- B. Replace defective mortar. Match adjacent work.

- C. Clean soiled surfaces with cleaning solution.

3.15 PROTECTION

- A. Without damaging completed work, provide protective boards at exposed external corners that are subject to damage by construction activities.

END OF SECTION

SECTION 04 2723
CAVITY WALL UNIT MASONRY

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Concrete Block.
- B. Mortar and Grout.
- C. Reinforcement and Anchorage.
- D. Flashings.
- E. Lintels.
- F. Accessories.

1.02 RELATED REQUIREMENTS

- A. Section 04 4301 - Stone Masonry Veneer: Rough stone bonded to masonry back-up.
- B. Section 07 9200 - Joint Sealants: Sealing control and expansion joints.

1.03 REFERENCE STANDARDS

- A. ACI 530/530.1/ERTA - Building Code Requirements and Specification for Masonry Structures and Related Commentaries; 2011.
- B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2009.
- C. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon Steel Bars for Concrete Reinforcement; 2015.
- D. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete; 2015.
- E. ASTM C90 - Standard Specification for Loadbearing Concrete Masonry Units; 2014.
- F. ASTM C91/C91M - Standard Specification for Masonry Cement; 2012.
- G. ASTM C129 - Standard Specification for Nonloadbearing Concrete Masonry Units; 2011.
- H. ASTM C140/C140M - Standard Test Methods of Sampling and Testing Concrete Masonry Units and Related Units; 2014.
- I. ASTM C150/C150M - Standard Specification for Portland Cement; 2015.
- J. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes; 2006 (Reapproved 2011).
- K. ASTM C270 - Standard Specification for Mortar for Unit Masonry; 2014a.
- L. ASTM C404 - Standard Specification for Aggregates for Masonry Grout; 2011.
- M. ASTM C476 - Standard Specification for Grout for Masonry; 2010.
- N. ASTM C780 - Standard Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry; 2012.
- O. ASTM D4637/D4637M - Standard Specification for EPDM Sheet Used in Single-Ply Roof Membrane; 2013.

1.04 ADMINISTRATIVE REQUIREMENTS

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data for masonry units and mortar.
- C. Manufacturer's Certificate: Certify that masonry units meet or exceed specified requirements.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver, handle, and store masonry units by means that will prevent mechanical damage and contamination by other materials.

1.07 FIELD CONDITIONS

- A. Cold and Hot Weather Requirements: Comply with requirements of ACI 530/530.1/ERTA or applicable building code, whichever is more stringent.

PART 2 PRODUCTS

2.01 UNIT MASONRY - GENERAL

2.02 CONCRETE MASONRY UNITS

- A. Concrete Block: Comply with referenced standards and as follows:
 - 1. Size: Standard units with nominal face dimensions of 16 by 8 inches (400 by 200 mm) and nominal depths as indicated on the drawings for specific locations.
 - 2. Special Shapes: Provide non-standard blocks configured for corners.
 - 3. Load-Bearing Units: ASTM C90, normal weight.
 - a. Hollow block, as indicated.
 - 4. Non-Loadbearing Units: ASTM C129.
 - a. Hollow block, as indicated.
 - b. Medium weight.

2.03 MORTAR AND GROUT MATERIALS

- A. Masonry Cement: ASTM C91/C91M Type N.
- B. Portland Cement: ASTM C150/C150M, Type I.
- C. Hydrated Lime: ASTM C207, Type S.
- D. Grout Aggregate: ASTM C404.
- E. Water: Clean and potable.
- F. Accelerating Admixture: Nonchloride type for use in cold weather.

2.04 REINFORCEMENT AND ANCHORAGE

- A. Manufacturers:
 - 1. Blok-Lok Limited : www.blok-lok.com.
 - 2. Hohmann & Barnard, Inc : www.h-b.com/sle.
 - 3. WIRE-BOND: www.wirebond.com.
- B. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi) (420 MPa) yield strength, deformed billet bars; galvanized.
- C. Multiple Wythe Joint Reinforcement: Truss type; fabricated with moisture drip; ASTM A1064/A1064M steel wire, hot dip galvanized after fabrication to ASTM A153/A153M, Class B; 0.1483 inch (3.8 mm) side rods with 0.1483 inch (3.8 mm) cross rods; width as required to provide not more than 1 inch (25 mm) and not less than 1/2 inch (13 mm) of mortar coverage on each exposure.
- D. Adjustable Multiple Wythe Joint Reinforcement: Truss type with adjustable ties or tabs spaced at 16 in (406 mm) on center, and fabricated with moisture drip; ASTM A1064/A1064M steel wire, hot dip galvanized after fabrication to ASTM A153/A153M, Class B; 0.1875 inch (4.8 mm) side rods with 0.1483 inch (3.8 mm) cross rods and adjustable components of 0.1875 inch (4.8 mm) wire; width of components as required to provide not more than 1 inch (25 mm) and not less than 1/2 inch (13 mm) of mortar coverage from each masonry face.
 - 1. Vertical adjustment: Not less than 2 inches (50 mm).
 - 2. Insulation Clips: Provide clips at tabs or ties designed to secure insulation against outer face of inner wythe of masonry.
- E. Strap Anchors: Bent steel shapes configured as required for specific situations, 1-1/4 in (32 mm) width, 0.105 in (2.7 mm) thick, lengths as required to provide not more than 1 inch (25 mm) of mortar coverage on each exposure.

mm) and not less than 1/2 inch (13 mm) of mortar coverage from masonry face, corrugated for embedment in masonry joint, hot dip galvanized to ASTM A 153/A 153M, Class B.

- F. Wall Ties: Corrugated formed sheet metal, 7/8 inch (22 mm) wide by 0.05 inch (1.22 mm) thick, hot dip galvanized to ASTM A 153/A 153M, Class B, sized to provide not more than 1 inch (25 mm) and not less than 1 inch (25 mm) of mortar coverage from masonry face.
- G. Two-Piece Wall Ties: Formed steel wire, 0.1875 inch (4.8 mm) thick, adjustable, eye and pintle type, hot dip galvanized to ASTM A 153/A 153M, Class B, sized to provide not more than 1 inch (25 mm) and not less than 1/2 inch (13 mm) of mortar coverage from masonry face and to allow vertical adjustment of up to 1-1/4 in (32 mm).

2.05 FLASHINGS

- A. EPDM Flashing: ASTM D4637/D4637M, Type I, 0.040 inch (1.0 mm) thick.

2.06 ACCESSORIES

- A. Preformed Control Joints: Rubber material. Provide with corner and tee accessories, fused joints.
- B. Weeps: Polyethylene tubing.
- C. Cleaning Solution: Non-acidic, not harmful to masonry work or adjacent materials.

2.07 MORTAR AND GROUT MIXES

- A. Mortar for Unit Masonry: ASTM C270, using the Proportion Specification.
 - 1. Masonry below grade and in contact with earth; Type S.
 - 2. Exterior, loadbearing masonry; Type S or M.
 - 3. Interior, loadbearing masonry; Type N.
 - 4. Interior, non-loadbearing masonry; Type N.
- B. Grout: ASTM C476; consistency required to fill indicated volumes completely for grouting; fine grout for spaces with smallest horizontal dimension of 2 inches (50 mm) or less; coarse grout for spaces with smallest horizontal dimension greater than 2 inches (50 mm).

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive masonry.
- B. Verify that related items provided under other sections are properly sized and located.
- C. Verify that built-in items are in proper location, and ready for roughing into masonry work.

3.02 PREPARATION

- A. Direct and coordinate placement of metal anchors supplied for installation under other sections.
- B. Provide temporary bracing during installation of masonry work. Maintain in place until building structure provides permanent bracing.

3.03 COURSING

- A. Establish lines, levels, and coursing indicated. Protect from displacement.
- B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.
- C. Concrete Masonry Units:
 - 1. Bond: Running.
 - 2. Coursing: One unit and one mortar joint to equal 8 inches (200 mm).
 - 3. Mortar Joints: Concave.

3.04 PLACING AND BONDING

- A. Lay hollow masonry units with face shell bedding on head and bed joints.
- B. Buttering corners of joints or excessive furrowing of mortar joints is not permitted.
- C. Remove excess mortar as work progresses.

- D. Interlock intersections and external corners .
- E. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.
- F. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.
- G. Cut mortar joints flush where wall tile is scheduled or resilient base is scheduled.
- H. Isolate masonry partitions from vertical structural framing members with a control joint .
- I. Isolate top joint of masonry partitions from horizontal structural framing members and slabs or decks with compressible joint filler.

3.05 WEEPS/CAVITY VENTS

- A. Install weeps in cavity walls at 24 inches (600 mm) on center horizontally above through-wall flashing, above shelf angles and lintels, and at bottom of walls.

3.06 CAVITY WALL CONSTRUCTION

- A. Do not permit mortar to drop or accumulate into cavity air space or to plug weep/cavity vents.
- B. Install cavity mortar diverter at base of cavity as recommended by manufacturer to prevent mortar droppings from blocking weep/cavity vents.
- C. Build inner wythe ahead of outer wythe to receive accessories.

3.07 REINFORCEMENT AND ANCHORAGES - CAVITY WALL MASONRY

- A. Install horizontal joint reinforcement 16 inches (400 mm) on center.
- B. Lap joint reinforcement ends minimum 6 inches (150 mm).
- C. Fasten anchors to structural framing and embed in masonry joints as masonry is laid. Space anchors at maximum of 24 inches (600 mm) horizontally and 16 inches (400 mm) vertically.

3.08 MASONRY FLASHINGS

- A. Whether or not specifically indicated, install masonry flashing to divert water to exterior at all locations where downward flow of water will be interrupted.
- B. Extend EPDM flashings to within 1/4 inch (6 mm) of exterior face of masonry.

3.09 GROUTED COMPONENTS

- A. Reinforce bond beams with 2, No. 4 (M____) bars, 1 inch (25 mm) from bottom web.
- B. Reinforce columns with 1, No. 4 (M____) bars, placed centered.
- C. Lap splices minimum 48 bar diameters.
- D. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch (13 mm) of dimensioned position.
- E. Place and consolidate grout fill without displacing reinforcing.
- F. At bearing locations, fill masonry cores with grout for a minimum 12 inches (300 mm) either side of opening.

3.10 CONTROL AND EXPANSION JOINTS

- A. Install preformed control joint device in continuous lengths. Seal butt and corner joints in accordance with manufacturer's instructions.

3.11 TOLERANCES

- A. Maximum Variation from Alignment of Columns: 1/4 inch (6 mm).
- B. Maximum Variation From Unit to Adjacent Unit: 1/16 inch (1.6 mm).
- C. Maximum Variation from Plane of Wall: 1/4 inch in 10 ft (6 mm/3 m) and 1/2 inch in 20 ft (13 mm/6 m) or more.
- D. Maximum Variation from Plumb: 1/4 inch (6 mm) per story non-cumulative; 1/2 inch (13 mm) in two stories or more.

- E. Maximum Variation from Level Coursing: 1/8 inch in 3 ft (3 mm/m) and 1/4 inch in 10 ft (6 mm/3 m); 1/2 inch in 30 ft (13 mm/9 m).
- F. Maximum Variation of Joint Thickness: 1/8 inch in 3 ft (3 mm/m).
- G. Maximum Variation from Cross Sectional Thickness of Walls: 1/4 inch (6 mm).

3.12 FIELD QUALITY CONTROL

- A. An independent testing agency will perform field quality control tests, as specified in Section 01 4000.
- B. Concrete Masonry Unit Tests: Test each variety of concrete unit masonry in accordance with ASTM C140/C140M for conformance to requirements of this specification.
- C. Mortar Tests: Test each type of mortar in accordance with recommended procedures in ASTM C780, testing with same frequency as masonry samples.

3.13 CLEANING

- A. Remove excess mortar and mortar smears as work progresses.
- B. Replace defective mortar. Match adjacent work.
- C. Clean soiled surfaces with cleaning solution.
- D. Use non-metallic tools in cleaning operations.

3.14 PROTECTION

- A. Without damaging completed work, provide protective boards at exposed external corners that are subject to damage by construction activities.

END OF SECTION

SECTION 04 4301
STONE MASONRY VENEER

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Cut stone veneer at exterior walls.
- B. Metal anchors and accessories.
- C. Setting mortar.

1.02 REFERENCE STANDARDS

- A. ACI 530/530.1/ERTA - Building Code Requirements and Specification for Masonry Structures and Related Commentaries; 2011.
- B. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2015.
- C. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2015.
- D. ASTM C270 - Standard Specification for Mortar for Unit Masonry; 2014a.

1.03 SUBMITTALS

- A. Product Data: Provide data on stone units, mortar, and reinforcement.
- B. Samples: Submit panel stone samples illustrating minimum and maximum stone sizes, color range, texture, and markings.
- C. Samples: Submit mortar color samples.

1.04 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing work of the type required by this section, with minimum 3 years of documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Protect stone from discoloration during storage on site.

1.06 PROJECT CONDITIONS

- A. Sequence work to coordinate the installation of stone work with installation of adjacent construction.

1.07 FIELD CONDITIONS

- A. Cold Weather Requirements: Comply with requirements of ACI 530/530.1/ERTA or applicable building code, whichever is more stringent.

PART 2 PRODUCTS

2.01 STONE

- A. Chilton Weathered Edge with Red. Surface texture to be selected by Architect.

2.02 MORTAR

- A. Setting Mortar: ASTM C270, Type S, using the Proportion Method .

2.03 ACCESSORIES

- A. Horizontal Joint Reinforcement: As specified in Section 04 2000.
- B. Wall Ties: Formed steel wire, hot dip galvanized per ASTM A 123/A 123M, wire loop for embedment in back-up masonry.
- C. Other Anchors in Direct Contact with Stone: ASTM A 666, Type 304, stainless steel, of sizes and configurations required for support of stone and applicable superimposed loads.
- D. Flashings: As indicated on drawings and as required.
- E. Weep/Cavity Vents: Polyethylene tubing.

- F. Cleaning Solution: Manufactured recommended product type.

2.04 STONE FABRICATION

- A. Nominal Thickness: 4 inch.
- B. Pattern and Coursing: Random Ashlar.
- C. Slope exposed top surfaces of stone and horizontal sill surfaces for shedding water.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that support work and site conditions are ready to receive work of this section.
- B. Verify that items built-in under other sections are properly located and sized.

3.02 PREPARATION

- A. Establish lines, levels, and coursing. Protect from disturbance.
- B. Clean stone prior to erection. Do not use wire brushes or implements that mark or damage exposed surfaces.

3.03 INSTALLATION

- A. Install flashings of longest practical length and seal watertight to back-up. Lap end joints minimum 6 inches (150 mm) and seal watertight.
- B. Size stone units to fit opening dimensions and perimeter conditions.
- C. Arrange stone pattern to provide color uniformity and minimize visual variations, and provide a uniform blend of stone unit sizes.
- D. Install weep/cavity vents in vertical stone joints at 16-24 inches (____ mm) on center horizontally; immediately above horizontal flashings, above shelf angles and supports, and at top of each cavity space; do not permit mortar accumulation in cavity space.

3.04 REINFORCEMENT AND ANCHORAGE

- A. Install horizontal joint reinforcement 16 inches (400 mm) on center.
- B. Place horizontal joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches (400 mm) each side of opening.
- C. Lap joint reinforcement ends minimum 6 inches (150 mm).
- D. Embed wall ties in masonry back-up to bond veneer to back-up at maximum 16 inches (400 mm) on center vertically and 36 inches (900 mm) on center horizontally.

3.05 JOINTS

- A. Pack mortar into joints and work into voids. Neatly tool surface to concave joint.
- B. At joints to be sealed, clean mortar out of joint before it sets. Brush joints clean.

3.06 CLEANING

- A. Remove excess mortar as work progresses, and upon completion of work.
- B. Clean soiled surfaces with cleaning solution.
- C. Use non-metallic tools in cleaning operations.

END OF SECTION

SECTION 04 7200
CAST STONE MASONRY

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Architectural cast stone.

1.02 REFERENCE STANDARDS

- A. ACI 318 - Building Code Requirements for Structural Concrete and Commentary; 2011.
- B. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products; 2015.
- C. ASTM A 185/A 185M - Standard Specification for Steel Welded Wire Reinforcement, Plain, for Concrete; 2006.
- D. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon Steel Bars for Concrete Reinforcement; 2015.
- E. ASTM A767/A767M - Standard Specification for Zinc-Coated (Galvanized) Steel Bars for Concrete Reinforcement; 2009.
- F. ASTM A884/A884M - Standard Specification for Epoxy-Coated Steel Wire and Welded Wire Reinforcement; 2014.
- G. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete; 2015.
- H. ASTM C150/C150M - Standard Specification for Portland Cement; 2015.
- I. ASTM C1364 - Standard Specification for Architectural Cast Stone; 2010b.

1.03 SUBMITTALS

- A. Shop Drawings: Include elevations, dimensions, layouts, profiles, cross sections, reinforcement, exposed faces, arrangement of joints, anchoring methods, anchors, and piece numbers.
- B. Mortar Color Selection Samples.
- C. Verification Samples: Pieces of actual cast stone components not less than 12 inches (305 mm) square, illustrating range of color and texture to be anticipated in components furnished for the project.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A current producer member of the Cast Stone Institute with a minimum of 5 years of experience in producing cast stone of the types required for project and:
 - 1. Adequate plant capacity to furnish quality, sizes, and quantity of cast stone required without delaying progress of the work.
 - 2. Products previously produced by plant and exposed to weather that exhibit satisfactory appearance.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Deliver cast stone components secured to shipping pallets and protected from damage and discoloration. Protect corners from damage.
- B. Number each piece individually to match shop drawings and schedule.
- C. Store cast stone components and installation materials in accordance with manufacturer's instructions.
- D. Store cast stone components on pallets with nonstaining, waterproof covers. Ventilate under covers to prevent condensation. Prevent contact with dirt.
- E. Protect cast stone components during handling and installation to prevent chipping, cracking, or other damage.

- F. Store mortar materials where contamination can be avoided.
- G. Schedule and coordinate production and delivery of cast stone components with unit masonry work to optimize on-site inventory and to avoid delaying the work.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Architectural Cast Stone:
 - 1. Any current producer member of the Cast Stone Institute.
 - 2. or approved equal.

2.02 ARCHITECTURAL CAST STONE

- A. Cast Stone: Architectural concrete product manufactured to simulate appearance of natural limestone, complying with ASTM C1364.
 - 1. Compressive Strength: (ASTM C39) 5200 psi.
 - 2. Freeze-Thaw Resistance: Demonstrated by laboratory testing in accordance with ASTM C1364.
 - 3. Surface Texture: Fine grained texture, with no bugholes, air voids, or other surface blemishes visible from distance of 20 feet (6 meters).
 - 4. Color: Selected by Architect from manufacturer's full range.
 - 5. Remove cement film from exposed surfaces before packaging for shipment.
- B. Shapes: Provide shapes indicated on drawings and as provided by specified product.
 - 1. Unless otherwise indicated on drawings, provide:
 - a. Wash or slope of 1:12 on exterior horizontal surfaces.
 - b. Raised fillets at back of sills and at ends to be built in.
- C. Reinforcement: Provide reinforcement as required to withstand handling and structural stresses; comply with ACI 318.
 - 1. Pieces More than 12 inches (305 mm) Wide: Provide full length two-way reinforcement of cross-sectional area not less than 0.25 percent of unit cross-sectional area.

2.03 MATERIALS

- A. Portland Cement: ASTM C150/C150M.
 - 1. Type 1 -Normal Portland Type , Integral color -to be selected.
- B. Reinforcing Bars: ASTM A615/A615M deformed bars, galvanized.
 - 1. Galvanized in accordance with ASTM A767/A767M, Class I.
- C. Steel Welded Wire Reinforcement: ASTM A1064/A1064M, galvanized or ASTM A884/A884M, epoxy coated.
- D. Embedded Anchors, Dowels, and Inserts: Type 304 stainless steel, of type and size as required for conditions.
- E. Shelf Angles and Similar Structural Items: Hot-dip galvanized steel per ASTM A123/A123M, of shapes and sizes as required for conditions.
- F. Mortar & Grout: As recommended by the manufacturer.
- G. Sealant: As specified in Section 07 9005.
- H. Cleaner: Cleaner designed for removing mortar and grout stains, efflorescence, and other construction stains from new masonry surfaces without discoloring or damaging masonry surfaces; approved for intended use by cast stone manufacturer and by cleaner manufacturer for use on cast stone and adjacent masonry materials.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine construction to receive cast stone components. Notify Architect if construction is not acceptable.
- B. Do not begin installation until unacceptable conditions have been corrected.

3.02 INSTALLATION

- A. Install cast stone as indicated on the drawings and per manufacturer requirements.
- B. Joints: Make all joints 3/8 inch (9.5 mm), except as otherwise detailed.
 - 1. Rake mortar joints 3/4 inch (19 mm) for pointing. Scrub face of each stone to remove excess mortar before it sets.
 - 2. Point joints with mortar in layers 3/8 inch (9.5 mm) thick and tool to a slight concave profile.
 - 3. Leave the following joints open for sealant:
 - a. Head joints in top courses, including copings, parapets, cornices, sills, and steps.
 - b. Joints in projecting units.
 - c. Joints between rigidly anchored units, including soffits, panels, and column covers.
 - d. Joints below lugged sills and stair treads.
 - e. Joints below ledge and relieving angles.
- C. Sealant Joints: Install sealants as specified in Section 07 9005.
- D. Installation Tolerances:
 - 1. Variation from Plumb: Not more than 1/8 inch in 10 feet (3 mm in 3 m) or 1/4 inch in 20 feet (6 mm in 6 m) or more.
 - 2. Variation from Level: Not more than 1/8 inch in 10 feet (3 mm in 3 m) or 1/4 inch in 20 feet (6 mm in 6 m), or 3/8 inch (9 mm) maximum.
 - 3. Variation in Joint Width: Not more than 1/8 inch in 36 inches (3 mm in 900 mm) or 1/4 of nominal joint width, whichever is less.
 - 4. Variation in Plane Between Adjacent Surfaces (Lipping): Not more than 1/16 inch (1.5 mm) difference between planes of adjacent units or adjacent surfaces indicated to be flush with units.
 - 5. Contractor to submit the tolerances for County's acceptance after inspection.

3.03 CLEANING AND PROTECTION

- A. Repair chips and other surface damage noticeable when viewed in direct daylight at 20 feet (6 m).
- B. Clean cast stone components as work progresses; remove mortar fins and smears before tooling joints.

END OF SECTION

SECTION 06 1000
ROUGH CARPENTRY

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Structural dimension lumber framing.
- B. Non-structural dimension lumber framing.
- C. Rough opening framing for doors, windows, and roof openings.
- D. Sheathing.
- E. Roofing nailers.
- F. Roofing cant strips.
- G. Preservative treated wood materials.
- H. Miscellaneous framing and sheathing.
- I. Communications and electrical room mounting boards.
- J. Concealed wood blocking, nailers, and supports.
- K. Miscellaneous wood nailers, furring, and grounds.

1.02 RELATED REQUIREMENTS

- A. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions.

1.03 REFERENCE STANDARDS

- A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware; 2009.
- B. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation; 2014.
- C. ASTM C1396/C1396M - Standard Specification for Gypsum Board; 2014.
- D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2014.
- E. ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials; 2014.
- F. AWWA U1 - Use Category System: User Specification for Treated Wood; American Wood Protection Association; 2012.
- G. ICC-ES AC308 - Acceptance Criteria for Water-Resistive Barriers; ICC Evaluation Service, Inc; 2013.
- H. PS 1 - Structural Plywood; 2009.
- I. PS 2 - Performance Standard for Wood-Based Structural-Use Panels; National Institute of Standards and Technology, U.S. Department of Commerce; 2010.
- J. PS 20 - American Softwood Lumber Standard; National Institute of Standards and Technology, Department of Commerce; 2010.
- K. SPIB (GR) - Grading Rules; Southern Pine Inspection Bureau, Inc.; 2014.
- L. WCLIB (GR) - Standard Grading Rules for West Coast Lumber No. 17; West Coast Lumber Inspection Bureau; 2004, and supplements.
- M. WWPA G-5 - Western Lumber Grading Rules; Western Wood Products Association; 2011.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.

1.06 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

- B. Correct defective Work within a five year period after Date of Substantial Completion.

PART 2 PRODUCTS

2.01 GENERAL REQUIREMENTS

- A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
 - 1. Species: Spruce-Pine-Fir (South), unless otherwise indicated.
 - 2. If no species is specified, provide any species graded by the agency specified; if no grading agency is specified, provide lumber graded by any grading agency meeting the specified requirements.
 - 3. Grading Agency: Any grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee (www.alsc.org) and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.
- B. Lumber fabricated from old growth timber is not permitted.
- C. Provide wood harvested within a 500 mile (805 km) radius of the project site.

2.02 DIMENSION LUMBER FOR CONCEALED APPLICATIONS

- A. Grading Agency: Western Wood Products Association (WWPA).
- B. Sizes: Nominal sizes as indicated on drawings, S4S.
- C. Moisture Content: S-dry or MC19.
- D. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:
 - 1. Lumber: S4S, No. 2 or Standard Grade.
 - 2. Boards: Southern Pine, fire #1/#2.

2.03 STRUCTURAL COMPOSITE LUMBER

- A. At Contractor's option, structural composite lumber may be substituted for concealed dimension lumber and timbers.
- B. Structural Composite Lumber: Factory fabricated beams, headers, and columns, of sizes and types indicated on drawings; structural capacity as published by manufacturer.
 - 1. Columns: Use laminated veneer lumber, laminated strand lumber, or parallel strand lumber with manufacturer's published E (modulus of elasticity): 2,000,000 psi.
 - 2. Beams and headers: Use laminated veneer lumber, laminated strand lumber, or parallel strand lumber with manufacturer's published E (modulus of elasticity): minimum. 2,000,000
 - 3. Manufacturers:
 - a. Weyerhaeuser: www.weyerhaeuser.com.
 - b. Boise Cascade; ____: www.bc.com.
 - c. Georgia-Pacific Corp.; ____: www.buildgp.com.

2.04 CONSTRUCTION PANELS

- A. Subfloor/Underlayment Combination: Any PS 2 type, rated Single Floor.
 - 1. Bond Classification: Exterior.
 - 2. Span Rating: 48.
 - 3. Performance Category: 1-1/8 PERF CAT.
 - 4. Edges: Tongue and groove.
- B. Roof Sheathing, APA PRP-108: Exposure 1, rated Structural I Sheathing.
 - 1. Span Rating: 40/20
 - 2. Thickness: 5/8"
- C. Wall Sheathing: APA PRP-108, Structural I Rated Sheathing, Exposure 1
 - 1. span Rating: 32/16
 - 2. Thickness: 1/2"
- D. Communications and Electrical Room Mounting Boards: PS 1 A-D plywood, or medium density fiberboard; 3/4 inch (19 mm) thick; flame spread index of 25 or less, smoke developed index of 450 or less, when tested in accordance with ASTM E84.
- E. Other Applications:
 - 1. Plywood Concealed From View But Located Within Exterior Enclosure: PS 1, C-C Plugged or better, Exterior grade.

2. Plywood Exposed to View But Not Exposed to Weather: PS 1, A-D, or better.
3. Other Locations: PS 1, C-D Plugged or better.

2.05 ACCESSORIES

- A. Fasteners and Anchors:
 1. Metal and Finish: Hot-dipped galvanized steel per ASTM A 153/A 153M for high humidity and preservative-treated wood locations, unfinished steel elsewhere.
 2. Drywall Screws: Bugle head, hardened steel, power driven type, length three times thickness of sheathing.
- B. Joist Hangers: Hot dipped galvanized steel, sized to suit framing conditions.
 1. For contact with preservative treated wood in exposed locations, provide minimum G185 (Z550) galvanizing per ASTM A653/A653M.
- C. Sill Gasket on Top of Foundation Wall: 1/4 inch (6 mm) thick, plate width, closed cell plastic foam from continuous rolls.
- D. Sill Flashing: As specified in Section 07 6200.
- E. Subfloor Glue: Waterproof, air cure type, cartridge dispensed.

2.06 FACTORY WOOD TREATMENT

- A. Treated Lumber and Plywood: Comply with requirements of AWWA U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
 1. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWWA standards.
- B. Preservative Treatment:
 1. Manufacturers:
 - a. Arch Wood Protection, Inc; ____: www.wolmanizedwood.com.
 - b. Viance, LLC; ____: www.treatedwood.com.
 2. Preservative Pressure Treatment of Lumber Above Grade: AWWA U1, Use Category UC3B, Commodity Specification A using waterborne preservative to 0.25 lb/cu ft (4.0 kg/cu m) retention.
 - a. Kiln dry lumber after treatment to maximum moisture content of 19 percent.
 - b. Treat lumber exposed to weather.
 - c. Treat lumber in contact with masonry or concrete.
 - d. Treat lumber in other locations as indicated.

PART 3 EXECUTION

3.01 PREPARATION

- A. Where wood framing bears on cementitious foundations, install full width sill flashing continuous over top of foundation, lap ends of flashing minimum of 4 inches (100 mm) and seal.
- B. Install sill gasket under sill plate of framed walls bearing on foundations; puncture gasket cleanly to fit tightly around protruding anchor bolts.
- C. Coordinate installation of rough carpentry members specified in other sections.

3.02 INSTALLATION - GENERAL

- A. Select material sizes to minimize waste.
- B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.
- C. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.

3.03 FRAMING INSTALLATION

- A. Set structural members level, plumb, and true to line. Discard pieces with defects that would lower required strength or result in unacceptable appearance of exposed members.

- B. Select material sizes to minimize waste. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components including shims, bracing and blocking.
- C. Make provisions for temporary construction loads, and provide temporary bracing sufficient to maintain structure in true alignment and safe condition until completion of erection and installation of permanent bracing.
- D. Install structural members full length without splices unless otherwise specifically detailed.
- E. Comply with member sizes, spacing, and configurations indicated, and fastener size and spacing indicated, but not less than required by applicable codes.
- F. Install horizontal spanning members with crown edge up and not less than 3 inches (76 mm) of bearing at each end.
- G. Construct double joist headers at floor and ceiling openings and under wall stud partitions that are parallel to floor joists; use metal joist hangers unless otherwise detailed.
- H. Provide bridging at joists in excess of 8 feet (2.3 m) span at mid-span. Fit solid blocking at ends of members.
- I. Frame wall openings with two or more studs at each jamb; support headers on cripple studs.

3.04 BLOCKING, NAILERS, AND SUPPORTS

- A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.
- B. In framed assemblies that have concealed spaces, provide solid wood fireblocking as required by applicable local code, to close concealed draft openings between floors and between top story and roof/attic space; other material acceptable to code authorities may be used in lieu of solid wood blocking.
- C. In walls, provide blocking attached to studs as backing and support for wall-mounted items, unless item can be securely fastened to two or more studs or other method of support is explicitly indicated.
- D. Where ceiling-mounting is indicated, provide blocking and supplementary supports above ceiling, unless other method of support is explicitly indicated.
- E. Provide the following specific non-structural framing and blocking:
 - 1. Cabinets and shelf supports.
 - 2. Wall brackets.
 - 3. Handrails.
 - 4. Grab bars.
 - 5. Towel and bath accessories.
 - 6. Wall-mounted door stops.
 - 7. Wall paneling and trim.
 - 8. Joints of rigid wall coverings that occur between studs.

3.05 ROOF-RELATED CARPENTRY

- A. Coordinate installation of roofing carpentry with deck construction, framing of roof openings, and roofing assembly installation.

3.06 INSTALLATION OF CONSTRUCTION PANELS

- A. Subflooring/Underlayment Combination: Glue and nail to framing; staples are not permitted.
- B. Roof Sheathing: Secure panels with long dimension perpendicular to framing members, with ends staggered and over firm bearing.
 - 1. At long edges use sheathing clips where joints occur between roof framing members.
 - 2. Nail panels to framing; staples are not permitted.
- C. Communications and Electrical Room Mounting Boards: Secure with screws to studs with edges over firm bearing; space fasteners at maximum 24 inches (610 mm) on center on all edges and into studs in field of board.
 - 1. Where boards are indicated as full floor-to-ceiling height, install with long edge of board parallel to studs.
 - 2. Install adjacent boards without gaps.

3.07 SITE APPLIED WOOD TREATMENT

- A. Apply preservative treatment compatible with factory applied treatment at site-sawn cuts, complying with manufacturer's instructions.
- B. Allow preservative to dry prior to erecting members.

3.08 TOLERANCES

- A. Framing Members: 1/4 inch (6 mm) from true position, maximum.
- B. Variation from Plane (Other than Floors): 1/4 inch in 10 feet (2 mm/m) maximum, and 1/4 inch in 30 feet (7 mm in 10 m) maximum.

3.09 CLEANING

- A. Waste Disposal: Comply with the requirements of Section 01 7419.
 - 1. Comply with applicable regulations.
 - 2. Do not burn scrap on project site.
 - 3. Do not burn scraps that have been pressure treated.
 - 4. Do not send materials treated with pentachlorophenol, CCA, or ACA to co-generation facilities or "waste-to-energy" facilities.
- B. Do not leave any wood, shavings, sawdust, etc. on the ground or buried in fill.
- C. Prevent sawdust and wood shavings from entering the storm drainage system.

END OF SECTION

SECTION 06 1753
SHOP-FABRICATED WOOD TRUSSES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Shop fabricated wood trusses for roof framing.
- B. Bridging, bracing, and anchorage.

1.02 RELATED REQUIREMENTS

- A. Section 06 1000 - Rough Carpentry: Installation requirements for miscellaneous framing.
- B. Section 06 1000 - Rough Carpentry: Material requirements for blocking, bridging, plates, and miscellaneous framing.

1.03 REFERENCE STANDARDS

- A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.
- B. TPI 1 - National Design Standard for Metal Plate Connected Wood Truss Construction; Truss Plate Institute; 2007 and errata (ANSI/TPI 1).
- C. BCSI 1-03 - Recommended Design Specification for Temporary Bracing of Metal Plate Connected Wood Trusses; Truss Plate Institute.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's data sheets on plate connectors, bearing plates, and metal bracing components.
- C. Shop Drawings: Show truss configurations, sizes, spacing, size and type of plate connectors, cambers, framed openings, bearing and anchor details, and bridging and bracing.
 - 1. Include identification of engineering software used for design.
 - 2. Provide shop drawings stamped or sealed by design engineer.

1.05 QUALITY ASSURANCE

- A. Designer Qualifications: Perform design by or under direct supervision of a Professional Engineer experienced in design of this Work and licensed in the State in which the Project is located.
- B. Fabricator Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Handle and erect trusses in accordance with TPI BCSI 1.
- B. Store trusses in vertical position resting on bearing ends.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Truss Plate Connectors:
 - 1. Alpine Engineered Products, Inc; ____: www.alpeng.com.
 - 2. MiTek Industries, Inc; ____: www.mii.com.
 - 3. Truswal Systems; ____: www.truswal.com.
- B. Truss Fabricators:
 - 1. Litfin.
 - 2. Superior.
 - 3. ABC.

2.02 TRUSSES

- A. Wood Trusses: Designed and fabricated in accordance with TPI 1 and BCSI 1-03 to achieve structural requirements indicated.

2.03 MATERIALS

- A. Lumber:
 - 1. Moisture Content: Between 7 and 9 percent.
 - 2. Lumber fabricated from old growth timber is not permitted.
- B. Steel Connectors: Hot-dipped galvanized steel sheet, ASTM A653/A653M Structural Steel (SS) Grade 33/230, with G90/Z275 coating; die stamped with integral teeth; thickness as indicated.
- C. Truss Bridging: Type, size and spacing recommended by truss manufacturer.

2.04 ACCESSORIES

- A. Wood Blocking, Bridging, Plates, and Miscellaneous Framing: Softwood lumber, any species, #2 grade, 19 percent maximum and 7 percent minimum moisture content.
- B. Fasteners: Hot-dip galvanized steel, type to suit application.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that supports and openings are ready to receive trusses.

3.02 PREPARATION

- A. Coordinate placement of bearing items.

3.03 ERECTION

- A. Install trusses in accordance with manufacturer's instructions and BCSI 1-03 and TPI BCSI 1; maintain a copy of each TPI document on site until installation is complete.
- B. Set members level and plumb, in correct position.
- C. Make provisions for erection loads, and for sufficient temporary bracing to maintain structure plumb, and in true alignment until completion of erection and installation of permanent bracing.
- D. Do not field cut or alter structural members without approval of Architect.
- E. Install permanent bridging and bracing.
- F. Install headers and supports to frame openings required.
- G. Frame openings between trusses with lumber in accordance with Section 06 1000.
- H. Coordinate placement of decking with work of this section.

3.04 TOLERANCES

- A. Framing Members: 1/2 inch (12 mm) maximum, from true position.

END OF SECTION

SECTION 07 1113
BITUMINOUS DAMPPROOFING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Bituminous dampproofing.

1.02 REFERENCE STANDARDS

- A. ASTM D4479/D4479M - Standard Specification for Asphalt Roof Coatings - Asbestos-Free; 2007 (Reapproved 2012).
- B. NRCA ML104 - The NRCA Roofing and Waterproofing Manual; Fifth Edition, with interim updates.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide properties of primer, bitumen, and mastics.

1.04 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing the work of this section with minimum 3 years experience.

1.05 FIELD CONDITIONS

- A. Maintain ambient temperatures above 40 degrees F (5 degrees C) for 24 hours before and during application until dampproofing has cured.

PART 2 PRODUCTS

2.01 DAMPPROOFING PRODUCTS

- A. Bituminous Dampproofing: Cold-applied, spray-grade; asphalt base, volatile petroleum solvents, and other content, suitable for application by spray, brush, roller, or squeegee; asbestos-free; suitable for application on vertical and horizontal surfaces.
 - 1. Composition: ASTM D4479 Type I, minimum.
 - 2. VOC Content: Not more than permitted by local, State, and federal regulations.
 - 3. Applied Thickness: 1/16 inch (1.5 mm), minimum, wet film.
- B. Primers, Mastics, and Related Materials: Type as recommended by dampproofing manufacturer.

2.02 ACCESSORIES

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify substrate surfaces are durable, free of matter detrimental to adhesion or application of dampproofing system.
- C. Verify that items that penetrate surfaces to receive dampproofing are securely installed.

3.02 PREPARATION

- A. Protect adjacent surfaces not designated to receive dampproofing.
- B. Clean and prepare surfaces to receive dampproofing in accordance with manufacturer's instructions.
- C. Do not apply dampproofing to surfaces unacceptable to manufacturer.
- D. Apply mastic to seal penetrations, small cracks, or minor honeycomb in substrate.

3.03 APPLICATION

- A. CMU above grade and foundation walls: Apply two coats of asphalt dampproofing.

- B. Perform work in accordance with NRCA Roofing and Waterproofing Manual.
- C. Apply bitumen by spray application.
- D. Seal items projecting through dampproofing surface with mastic. Seal watertight.

END OF SECTION

SECTION 07 2100
THERMAL INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Board insulation at cavity wall construction, perimeter foundation wall, and exterior face of CMU wall.

1.02 REFERENCE STANDARDS

- A. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation; 2015a.
- B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on product characteristics, performance criteria, and product limitations.

PART 2 PRODUCTS

2.01 APPLICATIONS

- A. Insulation at Perimeter of Foundation: Expanded polystyrene board.
- B. Insulation at Perimeter of Above Grade CMU Walls: Extruded polystyrene board.
- C. Insulation Inside Masonry Cavity Walls: Extruded polystyrene board.

2.02 FOAM BOARD INSULATION MATERIALS

- A. Extruded Polystyrene Board Insulation: Extruded polystyrene board; ASTM C578; with either natural skin or cut cell surfaces, and the following characteristics:
 - 1. Flame Spread Index: 25 or less, when tested in accordance with ASTM E84.
 - 2. Flame Spread Index: 75 or less, when tested in accordance with ASTM E84.
 - 3. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E84.
 - 4. R-value (RSI-value); 1 inch (25 mm) of material at 72 degrees F (22 C): 5 (0.88), minimum.
 - 5. Board Size: 48 x 96 inch (1220 x 2440 mm).
 - 6. Board Thickness: 1-1/2 inches (37.5 mm), 2 inches and as indicated on the drawings.
 - 7. Board Edges: Square.
 - 8. Thermal Conductivity (k factor) at 25 degrees F (-3.9 degrees C): 0.18 (0.31).
 - 9. Compressive Resistance: 15 psi (104 kPa).
 - 10. Board Density: 1.3 lb/cu ft (21 kg/cu m).
 - 11. Water Absorption, Maximum: 0.3 percent, by volume.
 - 12. Manufacturers:
 - a. Dow Chemical Company: www.dow.com.
 - b. Owens Corning Corp: www.owenscorning.com.
 - c. Kingspan Insulation LLC; GreenGuard XPS TYPE IV 25 PSI: www.trustgreenguard.com.
 - 13. Substitutions: See Section 01 6000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation.
- B. Verify substrate surfaces are flat, free of honeycomb, fins, or irregularities.

3.02 BOARD INSTALLATION AT FOUNDATION PERIMETER

- A. Install boards horizontally on foundation perimeter.

- B. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

3.03 BOARD INSTALLATION AT CAVITY WALLS

- A. Install boards to fit snugly between wall ties.
- B. Install boards horizontally on walls.
- C. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

3.04 PROTECTION

- A. Do not permit installed insulation to be damaged prior to its concealment.

END OF SECTION

SECTION 07 2126
BLOWN INSULATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Ceiling: Loose insulation pneumatically placed .

1.02 REFERENCE STANDARDS

- A. ASTM C739 - Standard Specification for Cellulosic Fiber (Wood-Base) Loose-Fill Thermal Insulation; 2011.
- B. ASTM C1015 - Standard Practice for Installation of Cellulosic and Mineral Fiber Loose-Fill Thermal Insulation; 2006 (Reapproved 2011).

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Blown Insulation:
 - 1. CertainTeed Corporation: www.certainteed.com.
 - 2. GreenFiber: www.greenfiber.com.
 - 3. Johns Manville: www.jm.com.
 - 4. Substitutions: See Section 01 6000 - Product Requirements.

2.02 MATERIALS

- A. Loose Fill Insulation: ASTM C739, cellulose fiber type, nodulated for pour and bulk for pneumatic placement.
 - 1. Thermal Conductivity: 0.27 BTU in/(hr sq ft deg F) (0.0389 W/(m K)).
 - 2. Total Thermal Resistance: R-value (RSI-value) of 40 (deg F hr sq ft)/Btu (____ (K sq m)/W).
- B. Ventilation Baffles: Formed plastic.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate, adjacent materials, and insulation are dry and ready to receive insulation.
- B. Verify that light fixtures have thermal cut-out device to restrict over-heating in soffit or ceiling spaces.
- C. Verify spaces are unobstructed to allow placement of insulation.

3.02 INSTALLATION

- A. Install insulation and ventilation baffle in accordance with ASTM C1015 and manufacturer's instructions.
- B. Place insulation against baffles. Do not impede natural attic ventilation to soffit.

3.03 CLEANING

- A. Remove loose insulation residue.

END OF SECTION

SECTION 07 2500
WEATHER BARRIERS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Vapor Retarders: Materials to make joints between exterior walls and roof and ceiling water vapor resistant and air tight.

1.02 REFERENCE STANDARDS

- A. ASTM D4397 - Standard Specification for Polyethylene Sheeting for Construction, Industrial, and Agricultural Applications; 2010.

1.03 FIELD CONDITIONS

- A. Maintain temperature and humidity recommended by the materials manufacturers before, during and after installation.

PART 2 PRODUCTS

2.01 WEATHER BARRIER ASSEMBLIES

- A. Interior Vapor Retarder:
 - 1. On bottom face of rafters, under cladding, use mechanically fastened vapor retarder sheet.

2.02 VAPOR RETARDER MATERIALS (AIR BARRIER AND WATER-RESISTIVE)

- A. Vapor Retarder Sheet: ASTM D4397 polyethylene film reinforced with glass fiber square mesh, clear.
 - 1. Thickness: 10 mil (0.25 mm).
 - 2. Water Vapor Permeance: As required by referenced standard for thickness specified.
 - 3. Seam and Perimeter Tape: Polyethylene self adhering type, mesh reinforced, 2 inches (50 mm) wide, compatible with sheet material.

2.03 ACCESSORIES

- A. Sealants, Tapes, and Accessories for Sealing Weather Barrier and Sealing Weather Barrier to Adjacent Substrates: As specified or as recommended by weather barrier manufacturer.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces and conditions are ready to accept the work of this section.

3.02 PREPARATION

- A. Remove projections, protruding fasteners, and loose or foreign matter that might interfere with proper installation.

3.03 INSTALLATION

- A. Install materials in accordance with manufacturer's instructions.
- B. Vapor Retarders: Install continuous air tight barrier over surfaces indicated, with sealed seams and with sealed joints to adjacent surfaces.
- C. Mechanically Fastened Sheets - Vapor Retarder On Interior:
 - 1. Seal seams, laps, perimeter edges, penetrations, tears, and cuts with self-adhesive tape, making air tight seal.
 - 2. Locate laps at a framing member; at laps fasten one sheet to framing member then tape overlapping sheet to first sheet.
 - 3. Seal entire perimeter to structure, window and door frames, and other penetrations.
 - 4. Where conduit, pipes, wires, ducts, outlet boxes, and other items are installed in insulation cavity, pass vapor retarder sheet behind item but over insulation and maintain air tight seal.

3.04 PROTECTION

- A. Do not leave materials exposed to weather longer than recommended by manufacturer.

END OF SECTION

SECTION 07 4113
METAL ROOF PANELS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Architectural roofing system of preformed steel panels.
- B. Fastening system.
- C. Factory finishing.
- D. Accessories and miscellaneous components.

1.02 RELATED REQUIREMENTS

- A. Section 07 9005 - Joint Sealers: Field-installed sealants.

1.03 REFERENCE STANDARDS

- A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Storage and handling requirements and recommendations.
 - 2. Installation methods.
 - 3. Specimen warranty.
- C. Shop Drawings: Include layouts of roof panels, details of edge and penetration conditions, spacing and type of connections, flashings, underlayments, and special conditions.
 - 1. Show work to be field-fabricated or field-assembled.
- D. Selection Samples: For each roofing system specified, submit color chips representing manufacturer's full range of available colors and patterns.
- E. Warranty: Submit specified manufacturer's warranty and ensure that forms have been completed in Owner's name and are registered with manufacturer.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in the manufacture of roofing systems similar to those required for this project, with not less than 5 years of documented experience.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Store roofing panels on project site as recommended by manufacturer to minimize damage to panels prior to installation.

1.07 WARRANTY

- A. Finish Warranty: Provide manufacturer's special warranty covering failure of factory-applied exterior finish on metal roof panels and agreeing to repair or replace panels that show evidence of finish degradation, including significant fading, chalking, cracking, or peeling within specified warranty period of 5 year period from date of Substantial Completion.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Design is based on Series 1000 roof panels manufactured by Englert, Inc.
- B. Substitutions: Not permitted.

2.02 ARCHITECTURAL METAL ROOF PANELS

- A. Architectural Metal Roofing: Provide complete engineered system complying with specified requirements and capable of remaining weathertight while withstanding anticipated movement of substrate and thermally induced movement of roofing system.

- B. Metal Panels: Factory-formed panels with factory-applied finish.
 - 1. Steel Panels:
 - a. Zinc-coated steel conforming to ASTM A653/A653M; minimum G60 (Z180) galvanizing.
 - b. Steel Thickness: Minimum 24 gage (0.024 inch) (0.61 mm).
 - 2. Profile: Standing seam, with minimum 1.0 inch (25 mm) seam height; concealed fastener system for field seaming with special tool.
 - 3. Texture: Smooth.
 - 4. Length: Full length of roof slope, without lapped horizontal joints.
 - 5. Width: Maximum panel coverage of 16 inches (406 mm).

2.03 ATTACHMENT SYSTEM

- A. Concealed System: Provide manufacturer's standard stainless steel or nylon-coated aluminum concealed anchor clips designed for specific roofing system and engineered to meet performance requirements, including anticipated thermal movement.

2.04 PANEL FINISH

- A. Fluoropolymer Coating System: Manufacturer's standard multi-coat thermocured coating system, including minimum 70 percent fluoropolymer color topcoat with minimum total dry film thickness of 0.9 mil (0.023 mm); color and gloss as selected from manufacturer's standards.

2.05 ACCESSORIES AND MISCELLANEOUS ITEMS

- A. Miscellaneous Sheet Metal Items: Provide flashings, gutters, downspouts, trim, moldings, closure strips, preformed crickets, caps, and equipment curbs of the same material, thickness, and finish as used for the roofing panels. Items completely concealed after installation may optionally be made of stainless steel.
- B. Rib and Ridge Closures: Provide prefabricated, close-fitting components of steel with corrosion resistant finish or combination steel and closed-cell foam.
- C. Sealants:
 - 1. Exposed Sealant: Elastomeric; silicone, polyurethane, or silyl-terminated polyether/polyurethane.
 - 2. Concealed Sealant: Non-curing butyl sealant or tape sealant.
- D. Underlayment for Wood Substrate: Ice & Water Membrane.

2.06 FABRICATION

- A. Panels: Fabricate panels and accessory items at factory, using manufacturer's standard processes as required to achieve specified appearance and performance requirements.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Do not begin installation of preformed metal roof panels until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

- A. Coordinate roofing work with provisions for roof drainage, flashing, trim, penetrations, and other adjoining work to assure that the completed roof will be free of leaks.
- B. Separate dissimilar metals by applying a bituminous coating, self-adhering rubberized asphalt sheet, or other permanent method approved by roof panel manufacturer.
- C. Where metal will be in contact with wood or other absorbent material subject to wetting, seal joints with sealing compound and apply one coat of heavy-bodied bituminous paint.

3.03 INSTALLATION

- A. Overall: Install roofing system in accordance with approved shop drawings and panel manufacturer's instructions and recommendations, as applicable to specific project conditions. Anchor all components of roofing system securely in place while allowing for thermal and structural movement.
 - 1. Install roofing system with concealed clips and fasteners, except as otherwise recommended by manufacturer for specific circumstances.
 - 2. Minimize field cutting of panels. Where field cutting is absolutely required, use methods that will not distort panel profiles. Use of torches for field cutting is absolutely prohibited.
- B. Accessories: Install all components required for a complete roofing assembly, including flashings, trim, closure strips, preformed crickets, caps, rib closures, ridge closures, and similar roof accessory items.
- C. Underlayment: Install Ice & Water Membrane on roof deck before installing preformed metal roof panels. Apply from eaves to ridge in shingle fashion, overlapping horizontal joints a minimum of 2 inches (50 mm) and side and end laps a minimum of 3 inches (75 mm). Offset seams.
- D. Roof Panels: Install panels in strict accordance with manufacturer's instructions, minimizing transverse joints except at junction with penetrations.

3.04 CLEANING AND PROTECTION

- A. Clean exposed sheet metal work at completion of installation. Remove grease and oil films, excess joint sealer, handling marks, and debris from installation, leaving the work clean and unmarked, free from dents, creases, waves, scratch marks, or other damage to the finish.
- B. Do not permit storage of materials or roof traffic on installed roof panels. Provide temporary walkways or planks as necessary to avoid damage to completed work. Protect roofing until completion of project.
- C. Touch-up, repair, or replace damaged roof panels or accessories before Date of Substantial Completion.

END OF SECTION

SECTION 07 4646

SIDING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Wood-fiber cement siding
- B. Engineered compressed wood fiber siding

1.02 REFERENCE STANDARDS

- A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.
- B. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes; 2014.
- C. ASTM C1186 - Standard Specification for Flat Fiber Cement Sheets; 2008 (Reapproved 2012).

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
 - 1. Manufacturer's requirements for related materials to be installed by others.
 - 2. Preparation instructions and recommendations.
 - 3. Storage and handling requirements and recommendations.
 - 4. Installation methods, including nail patterns.
- C. Warranty: Submit copy of manufacturer's warranty, made out in Owner's name, showing that it has been registered with manufacturer.

1.04 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing work of the type specified in this section with minimum 3 years of experience.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Store products under waterproof cover and elevated above grade, on a flat surface.

PART 2 PRODUCTS

2.01 SIDING

- A. Lap Siding: Individual horizontal boards made of cement and and/or cellulose fiber formed under high pressure with integral surface texture, complying with ASTM C1186 Type A Grade II; with machined edges, for nail attachment.
 - 1. Style: Standard lap style.
 - 2. Texture: Simulated cedar grain.
 - 3. Length: 12 ft (3.7 m), nominal.
 - 4. Width (Height): 7-1/4 inches (184 mm). (6 inch exposure)
 - 5. Thickness: 5/16 inch (8 mm), nominal.
 - 6. Finish: Factory applied topcoat.
 - 7. Color: As selected by Architect/Owner from manufacturers full range of available colors.
 - 8. Warranty: 50 year limited; transferable.
 - 9. Lap Siding Manufacturers:
 - a. CertainTeed Corporation : www.certainteed.com.
 - b. James Hardie Building Products, Inc: www.jameshardie.com.
 - c. LP SmartSide Siding (engineered wood): www.lpcorp.com
- B. Panel Siding: Vertically oriented panels made of cement and cellulose fiber formed under high pressure with integral surface texture, complying with ASTM C1186 Type A Grade II; with machined edges, for nail attachment.
 - 1. Length (Height): 96 inches (2400 mm), nominal.
 - 2. Width: 48 inches (1220 mm).

3. Thickness: 5/16 inch (8 mm), nominal.
4. Finish: Factory applied finish.
5. Color: As selected by Owner from manufacturers full range of available colors.
6. Warranty: 50 year limited; transferable.
7. Panel Siding Manufacturers:
 - a. CertainTeed Corporation : www.certainteed.com.
 - b. James Hardie Building Products, Inc: www.jameshardie.com.

2.02 ACCESSORIES

- A. Trim: Miratec or LP SmartSide (Prefinished). Sizes as indicated on the drawings.
- B. Fasteners: Galvanized or corrosion resistant; length as required to penetrate minimum 1-1/4 inch (32 mm).
- C. Joint Sealer: As specified in Section 07 9005.

PART 3 EXECUTION

3.01 PREPARATION

- A. Examine substrate and clean and repair as required to eliminate conditions that would be detrimental to proper installation.
- B. Verify that weather barrier has been installed over substrate completely and correctly.
- C. Do not begin until unacceptable conditions have been corrected.
- D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.02 PREPARATION

- A. Install sheet metal flashing:
 1. Above door and window trim and casings.
 2. Above horizontal trim in field of siding.

3.03 INSTALLATION

- A. Install in accordance with manufacturer's instructions and recommendations.
 1. Read warranty and comply with all terms necessary to maintain warranty coverage.
 2. Use trim details indicated on drawings.
 3. Touch up all field cut edges before installing.
 4. Pre-drill nail holes if necessary to prevent breakage.
- B. Joints in Horizontal Siding: Avoid joints in lap siding except at corners; where joints are inevitable stagger joints between successive courses.
- C. Joints in Vertical Siding: Install Z-flashing in horizontal joints between successive courses of vertical siding.
- D. Do not install siding less than 6 inches (150 mm) from surface of ground nor closer than 1 inch (25 mm) to roofs, patios, porches, and other surfaces where water may collect.
- E. Exterior Soffit Vents: Install according to manufacturer's written instructions and in locations shown on the drawings. Provide vent area shown on drawings.
- F. After installation, seal all joints except lap joints of lap siding. Seal around all penetrations. Paint all exposed cut edges.

3.04 PROTECTION

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION

SECTION 07 9005

JOINT SEALERS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Sealants and joint backing as specified by siding manufacturer.
- B. Precompressed foam sealers.

1.02 REFERENCE STANDARDS

- A. ASTM C834 - Standard Specification for Latex Sealants; 2014.
- B. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications; 2012.
- C. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2014.
- D. ASTM C1193 - Standard Guide for Use of Joint Sealants; 2013.
- E. ASTM C1311 - Standard Specification for Solvent Release Sealants; 2014.
- F. SCAQMD 1168 - South Coast Air Quality Management District Rule No.1168; current edition.

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate the work with other sections referencing this section.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data indicating sealant chemical characteristics.
- C. Manufacturer's Installation Instructions: Indicate special procedures.

1.05 QUALITY ASSURANCE

- A. Maintain one copy of each referenced document covering installation requirements on site.
- B. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.
- C. Applicator Qualifications: Company specializing in performing the work of this section with minimum three years documented experience and approved by manufacturer.

1.06 FIELD CONDITIONS

- A. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

1.07 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective work within a five year period after Date of Substantial Completion.
- C. Warranty: Include coverage for installed sealants and accessories which fail to achieve airtight seal, exhibit loss of adhesion or cohesion, or do not cure.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Silicone Sealants:
 - 1. Bostik Inc: www.bostik-us.com.
 - 2. Momentive Performance Materials, Inc (formerly GE Silicones): www.momentive.com.
 - 3. Pecora Corporation: www.pecora.com.
 - 4. BASF Construction Chemicals-Building Systems: www.chemrex.com.
- B. Polyurethane Sealants:
 - 1. OSI -Quad: www.ositough.com
 - 2. Bostik Inc: www.bostik-us.com.
 - 3. Pecora Corporation: www.pecora.com.

4. BASF Construction Chemicals-Building Systems: www.chemrex.com.
- C. Acrylic Sealants (ASTM C920):
 1. Tremco Global Sealants: www.tremcosealants.com.
- D. Butyl Sealants:
 1. Bostik Inc: www.bostik-us.com.
 2. Pecora Corporation: www.pecora.com.
 3. Substitutions: See Section 01 6000 - Product Requirements.

2.02 SEALANTS

- A. Sealants and Primers - General: Provide products having volatile organic compound (VOC) content as specified in Section 01 6116.
- B. General Purpose Exterior Sealant: Polyurethane; ASTM C920, Grade NS, Class 25 minimum; Uses M, G, and A; single component.
 1. Color: Match adjacent finished surfaces.
 2. Applications: Use for:
 - a. Control, expansion, and soft joints in masonry.
 - b. Joints between concrete and other materials.
 - c. Joints between metal frames and other materials.
 - d. Other exterior joints for which no other sealant is indicated.
- C. Exterior Metal Lap Joint Sealant: Butyl or polyisobutylene, nondrying, nonskinning, noncuring.
 1. Applications: Use for:
 - a. Concealed sealant bead in sheet metal work.
- D. General Purpose Interior Sealant: Acrylic emulsion latex; ASTM C834, Type OP, Grade NF single component, paintable.
 1. Color: Match adjacent finished surfaces.
 2. Applications: Use for:
 - a. Interior wall and ceiling control joints.
 - b. Joints between door and window frames and wall surfaces.
 - c. Other interior joints for which no other type of sealant is indicated.
- E. Bathtub/Tile Sealant: White silicone; ASTM C920, Uses I, M and A; single component, mildew resistant.
 1. Applications: Use for:
 - a. Joints between plumbing fixtures and floor and wall surfaces.
 - b. Joints between kitchen and bath countertops and wall surfaces.
- F. Acoustical Sealant for Concealed Locations:
 1. Applications: Use for concealed locations only:
 - a. Sealant bead between top stud runner and structure and between bottom stud track and floor.
- G. Interior Floor Joint Sealant: Polyurethane, self-leveling; ASTM C920, Grade P, Class 25, Uses T, M and A; single component.
 1. Color: To be selected by Architect from manufacturer's standard range.
 2. Applications: Use for:
 - a. Expansion joints in floors.
- H. Butyl Sealant: ASTM C1311; single component, solvent release, non-skinning, non-sagging.
 1. Color: Match adjacent finished surfaces.
- I. Silicone Sealant: ASTM C920, Grade NS, Class 25 minimum; Uses NT, A, G, M, O; single component, solvent curingneutral curing, non-sagging, non-staining, fungus resistant, non-bleeding.
 1. Color: Match adjacent finished surfaces.
 2. Movement Capability: Plus and minus 25 percent.
 3. Service Temperature Range: -65 to 180 degrees F (-54 to 82 degrees C).
 4. Shore A Hardness Range: 15 to 35.

5. Applications: Use for:
 - a. Joints between plumbing fixtures and floor and wall surfaces..
 - b. Joints between kitchen and bath countertops and wall surfaces.

2.03 ACCESSORIES

- A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.
- B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.
- C. Joint Backing: Round foam rod compatible with sealant; ASTM D 1667, closed cell PVC; oversized 30 to 50 percent larger than joint width.
- D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that substrate surfaces are ready to receive work.
- B. Verify that joint backing and release tapes are compatible with sealant.

3.02 PREPARATION

- A. Remove loose materials and foreign matter that could impair adhesion of sealant.
- B. Clean and prime joints in accordance with manufacturer's instructions.
- C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.
- D. Protect elements surrounding the work of this section from damage or disfigurement.
- E. Exposed Concrete Floor Joints: Test joint filler in inconspicuous area of floor slab. Verify specified product does not stain or discolor slab.

3.03 INSTALLATION

- A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Perform installation in accordance with ASTM C1193.
- C. Perform acoustical sealant application work in accordance with ASTM C919.
- D. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.
- E. Install bond breaker where joint backing is not used.
- F. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
- G. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
- H. Tool joints concave.

3.04 CLEANING

- A. Clean adjacent soiled surfaces.

3.05 PROTECTION

- A. Protect sealants until cured.

END OF SECTION

SECTION 08 1113
HOLLOW METAL DOORS AND FRAMES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Thermally insulated hollow metal doors with frames.

1.02 REFERENCE STANDARDS

- A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design; 2010.
- B. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100); 2014.
- C. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames; 2011.
- D. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process; 2015.
- E. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Solution Hardened, and Bake Hardenable; 2015.
- F. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength; 2014.
- G. ASTM C1363 - Standard Test Method for Thermal Performance of Building Assemblies by Means of a Hot Box Apparatus; 2011.
- H. BHMA A156.115 - American National Standard for Hardware Preparation in Steel Doors and Steel Frames; 2014.
- I. ICC A117.1 - Accessible and Usable Buildings and Facilities; 2009.
- J. NAAMM HMMA 830 - Hardware Selection for Hollow Metal Doors and Frames; 2002.
- K. NAAMM HMMA 831 - Hardware Locations for Hollow Metal Doors and Frames; 2011.
- L. NAAMM HMMA 840 - Guide Specifications for Installation and Storage of Hollow Metal Doors and Frames; 2007.
- M. NAAMM HMMA 861 - Guide Specifications for Commercial Hollow Metal Doors and Frames; 2006.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and any indicated finish requirements.

1.04 QUALITY ASSURANCE

- A. Copies of Documents at Project Site: Maintain at the project site a copy of each referenced document that prescribes installation requirements.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Comply with NAAMM HMMA 840 or ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
- B. Protect with resilient packaging; avoid humidity build-up under coverings; prevent corrosion and adverse effects on factory applied painted finish.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Hollow Metal Doors and Frames:
 - 1. Republic Doors: www.republicdoor.com.
 - 2. Steelcraft, an Allegion brand: www.allegion.com/us.

3. Ceco Door Products: www.cecodoor.com.

2.02 DESIGN CRITERIA

- A. Requirements for Hollow Metal Doors and Frames:
 1. Steel used for fabrication of doors and frames shall comply with one or more of the following requirements; Galvannealed steel conforming to ASTM A653/A653M, cold-rolled steel conforming to ASTM A1008/A1008M, or hot-rolled pickled and oiled (HRPO) steel conforming to ASTM A1011/A1011M, Commercial Steel (CS) Type B for each.
 2. Accessibility: Comply with ICC A117.1 and ADA Standards.
 3. Exterior Door Top Closures: Flush end closure channel, with top and door faces aligned.
 4. Typical Door Face Sheets: Flush.
 5. Hardware Preparations, Selections and Locations: Comply with NAAMM HMMA 830 and NAAMM HMMA 831 or BHMA A156.115 and ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
 6. Zinc Coating for Typical Interior and/or Exterior Locations: Provide metal components zinc-iron alloy-coated (galvannealed) by the hot-dip process in accordance with ASTM A653/A653M, with manufacturer's standard coating thickness, unless noted otherwise for specific hollow metal doors and frames.
 7. Finish: Factory primed, for field finishing.
- B. Combined Requirements: If a particular door and frame unit is indicated to comply with more than one type of requirement, comply with the specified requirements for each type; for instance, an exterior door that is also indicated as being sound-rated must comply with the requirements specified for exterior doors and for sound-rated doors; where two requirements conflict, comply with the most stringent.

2.03 HOLLOW METAL DOORS

- A. Exterior Doors:
 1. Custom: NAAMM HMMA 861; Physical Performance Level A.
 2. Door Thermal Resistance: R-Value of 6.0 minimum, for installed thickness of polystyrene.
 3. Door Thickness: 1-3/4 inch (44.5 mm), nominal.
 4. Galvanizing: Components hot-dipped zinc-iron alloy-coated (galvannealed) in accordance with ASTM A653/A653M, with manufacturer's standard coating thickness.
 5. Insulating Value: U-value of 0.50, when tested in accordance with ASTM C1363.
 6. Weatherstripping: Integral, recessed into door edge or frame.

2.04 HOLLOW METAL FRAMES

- A. Comply with standards and/or custom guidelines as indicated for corresponding door in accordance with applicable door frame requirements.
- B. General:
 1. Comply with the requirements of grade specified for corresponding door.
 2. Finish: Factory primed, for field finishing.
 3. Provide mortar guard boxes for hardware cut-outs in frames to be installed in masonry or to be grouted.
 4. Frames in Masonry Walls: Size to suit masonry coursing with head member to fill opening without cutting masonry units.
- C. Exterior Door Frames: Type best suited for location.
 1. Galvanizing: Components hot-dipped zinc-iron alloy-coated (galvannealed) in accordance with ASTM A653/A653M, with A40/ZF120 coating.
 2. Weatherstripping: Integral, recessed into door edge or frame.
- D. Provide mortar guard boxes for hardware cut-outs in frames to be installed in masonry or to be grouted.

2.05 ACCESSORIES

- A. Grout for Frames: Portland cement grout with maximum 4 inch (102 mm) slump for hand troweling; thinner pumpable grout is prohibited.

- B. Silencers: Resilient rubber, fitted into drilled hole; 3 on strike side of single door, 3 on center mullion of pairs, and 2 on head of pairs without center mullions.

2.06 FINISHES

- A. Primer: Rust-inhibiting, complying with ANSI/SDI A250.10, door manufacturer's standard.
- B. Bituminous Coating: Asphalt emulsion or other high-build, water-resistant, resilient coating.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify that opening sizes and tolerances are acceptable.
- C. Verify that finished walls are in plane to ensure proper door alignment.

3.02 PREPARATION

- A. Coat inside of frames to be installed in masonry or to be grouted, with bituminous coating, prior to installation.

3.03 INSTALLATION

- A. Install doors and frames in accordance with manufacturer's instructions and related requirements of specified door and frame standards or custom guidelines indicated.
- B. Coordinate frame anchor placement with wall construction.
- C. Grout frames in masonry construction, using hand trowel methods; brace frames so that pressure of grout before setting will not deform frames.
- D. Coordinate installation of hardware.

3.04 TOLERANCES

- A. Maximum Diagonal Distortion: 1/16 in (1.5 mm) measured with straight edge, corner to corner.

3.05 ADJUSTING

- A. Adjust for smooth and balanced door movement.

END OF SECTION

SECTION 08 5413
FIBERGLASS WINDOWS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Factory fabricated fiberglass windows with fixed sash.

1.02 REFERENCE STANDARDS

- A. AAMA/WDMA/CSA 101/I.S.2/A440 - North American Fenestration Standard/Specification for windows, doors, and skylights; 2011.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Grade Substantiation: Prior to submitting shop drawings or starting fabrication, submit one of the following showing compliance with specified grade:
 - 1. Evidence of AAMA Certification.
 - 2. Evidence of WDMA Certification.
 - 3. Evidence of CSA Certification.
 - 4. Test report(s) by independent testing agency itemizing compliance and acceptable to authorities having jurisdiction.

1.04 QUALITY ASSURANCE

- A. Installer Qualifications: Company specializing in performing the work of this section with minimum 5 years of experience.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Protect finished surfaces with wrapping. Do not use adhesive papers or sprayed coatings that bond when exposed to sunlight or weather.
- B. Jig, brace, and box the window frame assemblies for transport to minimize flexing of members or joints.

1.06 FIELD CONDITIONS

- A. Do not install sealants when ambient temperature is less than 40 degrees F (5 degrees C).
- B. Maintain this minimum temperature during and after installation of sealants.

1.07 WARRANTY

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Fiberglass Windows:
 - 1. Pella Corporation; Pella Impervia: www.pellacommercial.com.
 - 2. Andersen Windows Commercial line.

2.02 WINDOW UNITS

- A. Fiberglass Windows: Hollow, tubular, multi-layer fiber reinforced material; factory fabricated; with vision glass, related flashings, anchorage and attachment devices.
 - 1. Movement: Accommodate movement between window and perimeter framing and deflection of lintel, without damage to components or deterioration of seals.
 - 2. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within system.
- B. Performance Requirements: Provide products that comply with the following:
 - 1. Grade: AAMA/WDMA/CSA 101/I.S.2/A440 requirements for specific window type:
 - a. Performance Class (PC): R.

PART 3 EXECUTION

3.01 INSTALLATION

- A. Install windows in accordance with manufacturer's instructions.
- B. Attach window frame and shims to perimeter opening to accommodate construction tolerances and other irregularities.
- C. Align window plumb and level, free of warp or twist. Maintain dimensional tolerances and alignment with adjacent work.

3.02 ACCESSORIES

- A. Window film to provide visual privacy as selected by Owner.

3.03 CLEANING

- A. Remove protective material from pre-finished surfaces.
- B. Wash surfaces by method recommended and acceptable to window manufacturer; rinse and wipe surfaces clean.
- C. Remove excess glazing sealant by moderate use of mineral spirits or other solvent acceptable to sealant manufacturer.

END OF SECTION

SECTION 08 7100

DOOR HARDWARE

PART 1 - GENERAL

1.1 CONDITIONS

- A. Conditions of the contract (General and Supplementary Conditions) and Division One General Requirements, govern the work of this section.
- B. This section includes all material, and related service necessary to furnish all finish hardware indicated on the drawings, or specified herein.
- C. Furnish UL listed hardware for all labeled and 20 min. openings in conformance with the requirements for the class of opening scheduled. Underwriters' requirements shall have precedence over specification where conflicts exist.
- D. All work shall be in accordance with all applicable state and local building codes. Code requirements shall have precedence over this specification where conflicts exist.

1.2 WORK INCLUDED

- A. This section includes the following:
 - 1. Furnish door hardware (for hollow metal, wood doors) specified herein, listed in the hardware schedule, and/or required by the drawings.
 - 2. Cylinders for Aluminum Doors
 - 3. Thresholds and Weather-stripping (Aluminum frame seals to be provided by aluminum door supplier)
- B. Where items of hardware are not definitely or correctly specified and is required for the intended service, such omission, error or other discrepancy should be directed to the Architect prior to the bid date for clarification by addendum. Otherwise furnish such items in the type and quantity established by this specification for the appropriate service intended.

1.3 RELATED WORK IN OTHER SECTIONS

- A. This section includes coordination with related work in the following sections:
 - 1. Division 6 Section "Finish Carpentry".
 - 2. Division 6 Section "Cabinet Hardware"
 - 3. Division 8 Section "Hollow Metal Doors and Frames".
 - 4. Division 8 Section "Wood Doors"
 - 5. Division 8 Section "Aluminum Entrances and Storefronts"

1.4 REFERENCES

- A. Publications of agencies and organizations listed below form a part of this specification section to the extent referenced.
 - 1. DHI - Recommended Locations for Builders' Hardware.
 - 2. NFPA 80 - Standards for Fire Doors and Windows.
 - 3. NFPA 101 - Code for Safety to Life from Fire in Buildings and Structures.
 - 4. UL - Building Material Directory.
 - 5. DHI - Door and Hardware Institute
 - 6. WHI - Warnock Hersey
 - 7. BHMA - Builders Hardware Manufacturers Association
 - 8. IBC 2012 - International Building Code 2012 Edition (as amended by local building code)

1.5 SUBMITTALS

- A. Within ten days after award of contract, submit detailed hardware schedule in quantities as required by Division 1 - General Conditions.

- B. Schedule format shall be consistent with recommendations for a vertical format as set forth in the Door & Hardware Institute's (DHI) publication "Sequence and Format for the Hardware Schedule". Hardware sets shall be consolidated to group multiple door openings which share similar hardware requirements. Schedule shall include the following information:
1. Door number, location, size, handing, and rating.
 2. Door and frame material, handing.
 3. Degree of swing.
 4. Manufacturer
 5. Product name and catalog number
 6. Function, type and style
 7. Size and finish of each item
 8. Mounting heights
 9. Explanation of abbreviations, symbols, etc.
 10. Numerical door index, indicating the hardware set/ group number for each door.
- C. When universal type door closers are to be provided, the schedule shall indicate the application method to be used for installation at each door: (regular arm, parallel arm, or top jamb).
- D. The schedule will be prepared under the direct supervision of a certified Architectural Hardware Consultant (AHC) employed by the hardware distributor. The hardware schedule shall be signed and embossed with the DHI certification seal of the supervising AHC. The supervising AHC shall attend any meetings related to the project when requested by the architect.
- E. Check the specified hardware for suitability and adaptability to the details and surrounding conditions.
- F. Review drawings from related trades as required to verify compatibility with specified hardware. Indicate unsuitable or incompatible items, and proposed substitutions in the hardware schedule.
- G. Provide documentation for all hardware to be furnished on labeled fire doors indicating compliance with positive pressure fire testing UL 10C.
- H. Furnish manufacturers' catalog data for each item of hardware in quantities as required by Division 1 - General Conditions.
- I. Submit a sample of each type of hardware requested by the architect. Samples shall be of the same finish, style, and function as specified herein. Tag each sample with its permanent location so that it may be used in the final work.
- J. Furnish with first submittal, a list of required lead times for all hardware items.
- K. After final approved schedule is returned, transmit corrected copies for distribution and field use in quantities as required by Division 1 - General Conditions.
- L. Furnish approved hardware schedules, template lists, and pertinent templates as requested by related trades.
- M. Furnish necessary diagrams, schematics, voltage and amperage requirements for all electro-mechanical devices or systems as required by related trades. Wiring diagrams shall be opening specific and include both a riser diagram and point to point diagram showing all wiring terminations.
- N. After receipt of approved hardware schedule, Hardware supplier shall initiate a meeting including the owner's representative to determine keying requirements. Upon completion of the initial key meeting, hardware supplier shall prepare a proposed key schedule with symbols and abbreviations as set forth in the door and hardware institute's publication "Keying Procedures, Systems, and Nomenclature". Submit copies of owner approved key schedule for review and field use in quantities as required by Division 1 - General Conditions. Wiring diagrams shall be included in final submittals transmitted for distribution and field use.

1.6 QUALITY ASSURANCE

- A. Manufacturers and model numbers listed are to establish a standard of function and quality. Similar items by approved manufacturers that are equal in design, function, and quality, may be considered for prior approval of the architect, provided the required data and physical samples are submitted for approval as set forth in Division One General Requirements.
- B. Obtain each type of hardware (hinges, latch & locksets, exit devices, closers, etc.) from a single manufacturer, although several may be indicated as offering products complying with requirements.
- C. Electrical drawings and electrical specifications are based on the specific electrified hardware components specified in hardware sets. When electronic hardware components other than those indicated in hardware sets are provided, the supplier shall be responsible for all costs incurred by the design team and their consultants to review, and revise electrical drawings and electrical specifications. Supplier shall also be responsible for any additional costs associated with required changes in related equipment, materials, installation, or final hook up to insure the system will operate and function as indicated in the construction documents, including hardware set operational / functional descriptions.
- D. All hardware items shall be manufactured no earlier than 6 months prior to delivery to site.
- E. Hardware supplier shall be factory trained and certified by the manufacture to provide and support all computer managed locks and system components.
- F. Installation of hardware shall be installed or directly supervised and inspected by a skilled installer certified by the manufacturer of locksets, door closers, and exit devices used on the project, or with not less than 3 years' experience in successful completion of projects similar in size and scope.
- G. Provide hardware for all labeled fire doors, which complies with positive pressure fire testing UL 10C.
- H. Comply with all applicable provisions of the standards referenced within section 1.4 of this specification.
- I. Hardware supplier shall participate when reasonably requested to meet with the contractor and or architect to inspect any claim for incorrect or non-functioning materials; following such inspection, the hardware supplier shall provide a written statement documenting the cause and proposed remedy of any unresolved items.

1.7 DELIVERY, STORAGE AND HANDLING

- A. Hardware supplier shall deliver hardware to the job site unless otherwise specified.
- B. All hardware shall be delivered in manufacturers' original cartons and shall be clearly marked with set and door number.
- C. Coordinate with contractor prior to hardware delivery and recommend secure storage and protection against loss and damage at job site.
- D. Contractor shall receive all hardware and provide secure and proper protection of all hardware items to avoid delays caused by lost or damaged hardware. Contractor shall report shortages to the Architect and hardware supplier immediately after receipt of material at the job site.
- E. Coordinate with related trades under the direction of the contractor for delivery of hardware items necessary for factory installation.

1.8 PRE-INSTALLATION MEETING

- A. Schedule a hardware pre-installation meeting on site to review and discuss the installation of continuous hinges, locksets, door closers, exit devices, overhead stops, and electromechanical door hardware.

- B. Meeting attendees shall be notified 7 days in advance and shall include: Architect, Contractor, Door Hardware Installers (including low voltage hardware), Manufacturers representatives for above hardware items, and any other effected subcontractors or suppliers.
- C. All attendees shall be prepared to distribute installation manuals, hardware schedules, templates, and physical hardware samples.

1.9 WARRANTY

- A. All hardware items shall be warranted against defects in material and workmanship as set forth in Division One General Requirements.
- B. Repair, replace, or otherwise correct deficient materials and workmanship without additional cost to owner.

PART 2 - PRODUCTS

2.1 FASTENERS

- A. All exposed fasteners shall be Phillips head or as otherwise specified, and shall match the finish of the adjacent hardware. All fasteners ex-posed to the weather shall be non-ferrous or stainless steel. Furnish correct fasteners to accommodate surrounding conditions.
- B. Coordinate required reinforcements for doors and frames. Seek approval of the architect prior to furnishing through-bolts. Furnish through-bolts as required for materials not readily reinforced.

2.2 BUTT HINGES

- A. Acceptable manufacturers and respective catalog numbers:

	<u>Ives</u>	<u>Hager</u>	<u>McKinney</u>
1. Standard Weight, Plain Bearing	5PB1	1279	T2714
2. Standard Weight, Ball Bearing	5BB1	BB1279	TB2714
3. Standard Weight, Ball Bearing, Non-Ferrous	5BB1	BB1191	TB2314
4. Heavy Weight, Ball Bearing	5BB1HW	BB1168	T4B3786
5. Heavy Weight, Ball Bearing, Non-Ferrous	5BB1HW	BB1199	T4B3386

- B. Unless otherwise specified, furnish the following hinge quantities for each door leaf.
 - 1. 3 hinges for doors up to 90 inches.
 - 2. 1 additional hinge for every 30 inch on doors over 90 inches.
 - 3. 4 hinges for Dutch door applications.
- C. Unless otherwise specified, top and bottom hinges shall be located as specified in division 8 Section "Hollow Metal Doors and Frames". Intermediate hinges shall be located equidistant from others.
- D. Unless otherwise specified, furnish hinge weight and type as follows:
 - 1. Standard weight: plain bearing hinge 5PB1 for interior openings through 36 inches wide without a door closer.
 - 2. Standard weight: ball bearing hinge 5BB1 for interior opening over 36 through 40 inches wide without a door closer, and for interior openings through 40 inches wide with a door closer.
 - 3. Heavyweight: 4 ball bearing hinge 5BB1HW for interior openings over 40 inches wide, and for all vestibule doors.
 - 4. Heavyweight: 4 ball bearing hinge 5BB1HWss for exterior openings unless otherwise listed in groups.
- E. Unless otherwise specified, furnish hinges for exterior doors, fabricated from brass, bronze, or stainless steel. Unless otherwise specified, hinges for interior doors may be fabricated from steel.
- F. Unless otherwise specified, furnish hinges in the following sizes:
 - 1. 5" x 5" 2-1/4" thick doors

2. 4-1/2" x 4-1/2" 1-3/4" thick doors
 3. 3-1/2" x 3-1/2" 1-3/8" thick doors
- G. Furnish hinges with sufficient width to accommodate trim and allow for 180-degree swing.
- H. Unless otherwise specified, furnish hinges with flat button tips with non-rising pins at interior doors, non-removable loose pins (NRP) at exterior and out-swinging interior doors.
- I. Unless otherwise specified, furnish all hinges to template standards.

2.3 LOCKS AND LATCHES

- A. Acceptable manufacturers and respective catalog numbers:

	<u>Schlage</u>	<u>Sargent</u>	<u>Corbin</u>
1. Grade 1 Mortise	L Series 17A	8200 LNP	ML2000 PSA
2. Small Case Mortise Deadbolt	L400 Series	4870 Series	DL4000 Series

- B. Unless otherwise specified, all locks and latches to have:

1. 2-3/4" Backset
2. 1/2" minimum throw latchbolt
3. 1" throw deadbolt
4. 6 pin cylinders
5. ANSI A115.2 strikes

- C. Provide guarded latch bolts for all locksets, and latch bolts with sufficient throw to maintain fire rating of both single and paired door assemblies.
- D. Length of strike lip shall be sufficient to clear surrounding trim.
- E. Provide wrought boxes for strikes at inactive doors, wood frames, and metal frames without integral mortar covers.

2.4 PULLS, PUSH BARS, PUSH/PULL PLATES

- A. Acceptable manufacturers and respective catalog numbers:

	<u>Burns</u>	<u>Hager</u>	<u>Ives</u>
1. Straight Pull (1" dia., 10" ctc)	26C	4J	8103-0
2. Straight Pull (3/4" dia., 8" ctc)	25B	3G	8102-8
3. Offset Door Pull (1" dia., 10" ctc)	39C	12J	8190-0
4. Pull / Push-Bar (1" dia., 10" ctc Pull)	422 x 26C	153	9103-0
5. Offset Pull / Push-Bar (1" dia., 10" ctc Pull)	422 x 39C	159	9190-0
6. Push Plate (.050 4"X 16")	54	30S 4 x 16	8200 4 x 16
7. Push Plate (.050 6"X 16")	56	30S 6 x 16	8200 6" X 16"
8. Pull Plate (1" dia., 10" ctc - .050" X 4" X 16")	5426C	34J 4 x 16	8303-0 4" X 16"

- A. Adjust dimensions of push plates to accommodate stile and rail dimensions, lite and louver cutouts, and adjacent hardware. Where required by adjacent hardware, push plates shall be factory drilled for cylinders or other mortised hardware. All push plates shall be beveled 4 sides and counter sunk.
- B. Where possible, provide back-to-back, and concealed mounting for pulls and push bars. Push bar length shall be 3" less door width, or center of stile to center of stile for stile & rail or full glass doors.

2.5 CLOSERS

- A. Acceptable manufacturers and respective catalog numbers:

<u>LCN</u>	<u>Sargent</u>
1. 4011 /4111 EDA	281 / 281P10

- B. Obtain door closers from a single manufacturer, although several may be indicated as offering products complying with requirements.

- C. Provide extra heavy duty arm (EDA / HD) when closer is to be installed using parallel arm mounting.
- D. Closers shall use high strength cast iron cylinders, forged main arms, and 1 piece forged steel pistons.
- E. Closers shall utilize a stable fluid withstanding temperature range of +120deg F to -30deg F without seasonal adjustment of closer speed to properly close the door. Closers for fire-rated doors shall be provided with temperature stabilizing fluid that complies with standards UL10C.
- F. Unless otherwise specified, all door closers shall have full covers and separate adjusting valves for sweeps, latch, and backcheck.
- G. Provide closers for all labeled doors. Provide closer series and type consistent with other closers for similar doors specified elsewhere on the project.
- H. Provide closers with adjustable spring power. Size closers to insure exterior and fire rated doors will consistently close and latch doors under existing conditions. Size all other door closers to allow for reduced opening force not to exceed 5 lbs.
- I. Install closers on the room side of corridor doors, stair side of stairways and interior side of exterior doors.
- J. Closers shall be furnished complete with all mounting brackets and cover plates as required by door and frame conditions, and by adjacent hardware.
- K. Door closers shall be provided with a powder coat finish to provide superior protection against the effects of weathering. Powder coat finish shall successfully pass a 100 hour salt spray test.

2.6 KICK PLATES AND MOP PLATES

- A. Furnish protective plates as specified in hardware groups.
- B. Where specified, provide 10" kick plates, 34" armor plates, and 4" mop plates. Unless otherwise specified, metal protective plates shall be .050" thick; plastic plates shall be 1/8" thick.
- C. Protective plates shall be 2" less door width, or 1" less door width at pairs. All protective plates shall be beveled 4 sides and counter sunk. Protection plates over 16" shall not be provided for labeled doors unless specifically approved by door manufacturers listing.
- D. Where specified, provide surface mounted door edges. Edges shall butt to protective plates. Provide edges with cutouts as required adjacent hardware.
- E. Adjust dimensions of protection plates to accommodate stile and rail dimensions, lite and louver cutouts, and adjacent hardware. Where required by adjacent hardware, protection plates shall be factory drilled for cylinders or other mortised hardware.

2.7 OVERHEAD STOPS

- A. Acceptable manufacturers and respective catalog numbers:

	<u>Glynn-Johnson</u>	<u>Rixson</u>	<u>Sargent</u>
1. Heavy Duty Surface Mount	GJ900 Series	9 Series	590
- B. Unless otherwise specified, furnish GJ900 series overhead stop for hollow metal or 1-3/4" solid core doors equipped with regular arm surface type closers that swing more than 140 degrees before striking a wall, for hollow metal or 1-3/4" solid core doors that open against equipment, casework, sidelights, or other objects that would make wall bumpers inappropriate, and as specified in hardware groups.
- C. Furnish sex bolt attachments for wood and mineral core doors unless doors are supplied with proper reinforcing blocks.
- D. Provide special stop only ("SE" suffix) overhead stops when used in conjunction with electronic hold open closers.

- E. Do not provide holder function for labeled doors.

2.8 WALL STOPS AND HOLDERS

- A. Acceptable manufacturers and respective catalog numbers:

	<u>Ives</u>	<u>Hager</u>	<u>Burns</u>
1. Wrought Convex Wall Bumper	WS406CVX	232W	570
2. Wrought Concave Wall Bumper	WS406CCV	236W	575

- B. Furnish a stop or holder for all doors. Furnish floor stops or hinge pin stops only where specifically specified.
- C. Where wall stops are not applicable, furnish overhead stops.
- D. Do not provide holder function for labeled doors.

2.9 WEATHERSTRIP, GASKETING

- A. Acceptable manufacturers and respective catalog numbers:

	<u>Zero</u>	<u>Pemko</u>	<u>NGP</u>	<u>Reese</u>
1. Weatherstrip	429	2891_PK	700NA	755
2. Sweeps	8192	18061_NB	B606	964
3. Drip Cap	142	346	16	R201

- B. Where specified in the hardware groups, furnish the above products unless otherwise detailed in groups.
- C. Provide weatherstripping all exterior doors and where specified.
- D. Provide intumescent and other required edge sealing systems as required by individual fire door listings to comply with positive pressure standards UL 10C.
- E. Provide Zero 188 smoke gaskets at all fire rated doors and smoke and draft control assemblies.
- F. Provide gasketing for all meeting edges on pairs of fire doors. Gasketing shall be compatible with astragal design provided by door supplier as required for specific fire door listings.

2.10 THRESHOLDS

- A. Acceptable manufacturers and respective catalog numbers:

	<u>Zero</u>	<u>Pemko</u>	<u>NGP</u>	<u>Reese</u>
1. Saddle Thresholds	8655	171	425	S205

- B. Hardware supplier shall verify all finish floor conditions and coordinate proper threshold as required to insure a smooth transition between threshold and interior floor finish.
- C. Threshold Types:
1. Unless otherwise specified, provide saddle threshold similar to Zero 8655 for all exterior openings with an interior floor finish less than or equal to 1/4" in height.
 2. Unless otherwise specified, provide half saddle threshold similar to Zero 1674 for all exterior openings with an interior floor finish greater than 1/4" in height. Threshold height shall match thickness of interior floor finish.

2.11 FINISHES AND BASE MATERIALS

- A. Unless otherwise indicated in the hardware groups or herein, hardware finishes shall be applied over base metals as specified in the following finish schedule:

<u>HARDWARE ITEM</u>	<u>BHMA FINISH AND BASE MATERIAL</u>
1. Butt Hinges: Exterior, or Non-Ferrous	630 (US32D - Satin Stainless Steel)
2. Butt Hinges: Interior	652 (US26D - Satin Chromium)
3. Locks and Latches	626 (US26D - Satin Chromium)
4. Pulls and Push Plates/Bars	630 (US32D - Satin Stainless Steel)
5. Closers	689 (Powder Coat Aluminum)
6. Protective Plates	630 (US32D - Satin Stainless Steel)

7. Overhead Stops	630 (US32D - Satin Stainless Steel)
8. Wall Stops and Holders	630 (US32D - Satin Stainless Steel)
9. Thresholds	628 (Mill Aluminum)
10. Weather-strip, Sweeps Drip Caps	Aluminum Anodized
11. Miscellaneous	626 (US26D - Satin Chromium)

2.12 KEYING

- A. Provide all cylinders in keyways as required to accommodate owners existing key system.
- B. All locks under this section shall be keyed as directed by the owner to an existing Master Key System.
- C. Furnish a total of 2 keys per cylinder. Actual cut keys to be determined by owner.
- D. Master keys, control keys, and change keys shall be delivered by registered mail to the owner. Construction keys shall be delivered to the contractor.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Prior to installation of hardware, installer shall examine door frame installation to insure frames have been set square and plumb. Installer shall examine doors, door frames, and adjacent wall, floor, and ceiling for conditions, which would adversely affect proper operation and function of door assemblies. Do not proceed with hardware installation until such deficiencies have been corrected.

3.2 INSTALLATION

- A. Before hardware installation, general contractor/construction manager shall coordinate a hardware installation seminar with a 1 week notice to all parties involved. The seminar is to be conducted on the installation of hardware, specifically of locksets, closers, exit devices, continuous hinges and overhead stops. Manufacturer's representative of the above products to present seminar. Seminar to be held at the job site and attended by installers of hardware (including low voltage hardware) for aluminum, hollow metal and wood doors. Training to include use of installation manuals, hardware schedule, templates and physical products samples.
- B. Install all hardware in accordance with the approved hardware schedule and manufacturers instructions for installation and adjustment.
- C. Set units level, plumb and true to the line and location. Adjust and reinforce the attachment substrate as necessary for proper installation and operation.
- D. Drill and countersink units which are not factory-prepared for anchorage fasteners. Space fasteners and anchors in accord with industry standards.
- E. Drill appropriate size pilot holes for all hardware attached to wood doors and frames.
- F. Shim doors as required to maintain proper operating clearance between door and frame.
- G. Unless otherwise specified, locate all hardware in accordance with the recommended locations for builders hardware for standard doors and frames as published by the Door and Hardware Institute.
- H. Use only fasteners supplied by or approved by the manufacturer for each respective item of hardware.
- I. Mortise and cut to close tolerance and conceal evidence of cutting in the finished work.
- J. Conceal push and pull bar fasteners where possible. Do not install through bolts through push plates.
- K. Install hardware on UL labeled openings in accordance with manufacturer's requirements to maintain the label.

- L. Apply self-adhesive gasketing on frame stop at head & latch side and on rabbet of frame at hinge side.
- M. Install hardware in accordance with supplemental "S" label instructions on all fire rated openings.
- N. Install wall stops to contact lever handles or pulls. Do not mount wall stops on casework, or equipment.
- O. Where necessary, adjust doors and hardware as required to eliminate binding between strike and latchbolt. Doors should not rattle.
- P. Overhead stops used in conjunction with electrified hold open closers shall be templated and installed to coincide with engagement of closer hold open position.
- Q. Install door closers on corridor side of lobby doors, room side of corridor doors, and stair side of stairways.
- R. Adjust spring power of door closers to the minimum force required to insure exterior and fire rated doors will consistently close and latch doors under existing conditions. Adjust all other door closers to insure opening force does not to exceed 5 lbs.
- S. Adjust "sweep", "latch", & "back check" valves on all door closers to properly control door throughout the opening and closing cycle. Adjust total closing speed as required to comply with all applicable state and local building codes.
- T. Install "hardware compatible" (bar stock) type weatherstripping continuously for an uninterrupted seal. Adjust templating for parallel arm door closers, exit devices, etc., as required to accommodate weatherstripping.
- U. Unless otherwise specified or detailed, install thresholds with the bevel in vertical alignment with the outside door face. Notch and closely fit thresholds to frame profile. Set thresholds in full bed of sealant.
- V. Compress sweep during installation as recommended by sweep manufacturer to facilitate a water resistant seal.
- W. Deliver to the owner 1 complete set of installation and adjustment instructions, and tools as furnished with the hardware.

3.3 FIELD QUALITY CONTROL

- A. After installation has been completed, the hardware supplier and manufacturers representative for locksets, door closers, exit devices, and overhead stops shall check the project and verify compliance with installation instructions, adjustment of all hardware items, and proper application according to the approved hardware schedule. Hardware supplier shall submit a list of all hardware that has not been installed correctly.
- B. After installation has been completed, the hardware supplier and manufacturers representative shall meet with the owner to explain the functions, uses, adjustment, and maintenance of each item of hardware. Hardware supplier shall provide the owner with a copy of all wiring diagrams. Wiring diagrams shall be opening specific and include both a riser diagram and point to point diagram showing all wiring terminations.

3.4 ADJUSTMENT AND CLEANING

- A. At final completion, and when H.V.A.C. equipment is in operation, installer shall make final adjustments to and verify proper operation of all door closers and other items of hardware. . Lubricate moving parts with type lubrication recommended by the manufacturer.
- B. All hardware shall be left clean and in good operation. Hardware found to be disfigured, defective, or inoperative shall be repaired or replaced.

3.5 HARDWARE SCHEDULE

- A. The following schedule of hardware groups are intended to describe opening function. The hardware supplier is cautioned to refer to the preamble of this specification for a complete description of all materials and services to be furnished under this section.

HWSET #: 1

QTY		DESCRIPTION	CATALOG NUMBER	MFR
	EA	HINGE	AS REQUIRED	IVE
1	EA	REMOVABLE MULLION	KR4954	VON
2	EA	IC CYLINDER	AS REQUIRED	SCH
1	EA	PANIC HARDWARE	LD-99-DT	VON
1	EA	PANIC HARDWARE	LD-99-NL	VON
2	EA	SURFACE CLOSER	4111 SCUSH	LCN
2	EA	PROTECTION PLATE	8400 10" X 1" LDW B-CS	IVE
1	EA	RAIN DRIP	142	ZER
1	EA	GASKETING	429	ZER
1	EA	DOOR SWEEP	8193 X 8193	ZER
2	EA	DOOR SWEEP	8198	ZER
1	EA	THRESHOLD	8655	ZER
1	EA	MULLION SEAL	8780	ZER

FUNCTION: (ANSI/BHMA 04) LATCHBOLT RETRACTED BY DEPRESSING THE ACTUATION BAR. ENTRANCE BY TRIM WHEN LATCH IS RELEASED BY KEY. KEY ONLY REMOVABLE WHEN LOCKED.

HWSET #: 2

QTY		DESCRIPTION	CATALOG NUMBER	MFR
	EA	HINGE	AS REQUIRED	IVE
1	EA	DEAD LOCK W/OCC IND	L496 L583-363	SCH
1	EA	PUSH PLATE	8200 6" X 16"	IVE
1	EA	PULL PLATE	8302 10" 4" X 16"	IVE
1	EA	SURFACE CLOSER	4011 SRI	LCN
1	EA	KICK PLATE	8400 10" X 2" LDW B-CS	IVE
1	EA	WALL STOP	WS406	IVE
1	EA	GASKETING	429	ZER
1	EA	DOOR SWEEP	8192	ZER
1	EA	THRESHOLD	8655	ZER

PUSH/PULL

END OF SECTION

SECTION 09 2116
GYPSUM BOARD ASSEMBLIES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Gypsum wallboard.
- B. Joint treatment and accessories.

1.02 REFERENCE STANDARDS

- A. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board; 2015.
- B. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board; 2013.
- C. ASTM C1396/C1396M - Standard Specification for Gypsum Board; 2014.
- D. GA-216 - Application and Finishing of Gypsum Board; 2013.

PART 2 PRODUCTS

2.01 GYPSUM BOARD ASSEMBLIES

- A. Provide completed assemblies complying with ASTM C840 and GA-216.

2.02 BOARD MATERIALS

- A. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
 - 1. Application: Use for ceilings, unless otherwise indicated.
 - 2. Thickness:
 - a. Vertical Surfaces: 5/8 inch (16 mm).

2.03 ACCESSORIES

- A. Joint Materials: ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.
 - 1. Tape: 2 inch (50 mm) wide, coated glass fiber tape for joints and corners, except as otherwise indicated.
- B. High Build Drywall Surfer: Vinyl acrylic latex-based coating for spray application, designed to take the place of skim coating and separate paint primer in achieving Level 5 finish.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that project conditions are appropriate for work of this section to commence.

3.02 BOARD INSTALLATION

- A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.

3.03 JOINT TREATMENT

- A. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
 - 1. Level 5: Walls and ceilings to receive semi-gloss or gloss paint finish and other areas specifically indicated.
- B. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
 - 1. Feather coats of joint compound so that camber is maximum 1/32 inch (0.8 mm).
- C. Where Level 5 finish is indicated, spray apply high build drywall surfer over entire surface after joints have been properly treated; achieve a flat and tool mark-free finish.

END OF SECTION

SECTION 09 6700
FLUID-APPLIED FLOORING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Fluid-applied flooring.

1.02 REFERENCE STANDARDS

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Samples: Submit two samples, 2x2 inch (_____ mm) in size illustrating color and pattern for each floor material for each color specified.

1.04 QUALITY ASSURANCE

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years documented experience.

1.05 DELIVERY, STORAGE, AND HANDLING

- A. Store resin materials in a dry, secure area.
- B. Store materials for three days prior to installation in area of installation to achieve temperature stability.

1.06 FIELD CONDITIONS

- A. Maintain minimum temperature in storage area of 55 degrees F (13 degrees C).

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Fluid-Applied Flooring:
 - 1. MICOR: www.micorco.com
 - 2. Sherwin Williams: www.sherwin-williams.com
- B. Additives for epoxy flooring:
 - 1. Torginol; Polymer ColorFlakes: www.torginol.com.

2.02 MATERIALS

- A. Fluid-Applied Flooring: Epoxy base coat(s), polyurethane top coat, flake finish.
 - 1. Color: As selected by Owner..

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that sub-floor surfaces are smooth and flat within the tolerances specified for that type of work and are ready to receive flooring.
- B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive flooring.
- C. Verify that concrete sub-floor surfaces are ready for flooring installation by testing for moisture emission rate and alkalinity; obtain instructions if test results are not within limits recommended by flooring materials manufacturer.

3.02 PREPARATION

- A. Remove sub-floor ridges and bumps. Fill low spots, cracks, joints, holes, and other defects with sub-floor filler.
- B. Apply primer to surfaces required by flooring manufacturer.

3.03 INSTALLATION - FLOORING

- A. Apply in accordance with manufacturer's instructions.

- B. Include anti-slip agent in top coat at floor.

3.04 PROTECTION

- A. Prohibit traffic on floor finish for 48 hours after installation.
- B. Barricade area to protect flooring until fully cured.

END OF SECTION

SECTION 09 7733
GLASS FIBER REINFORCED PLASTIC PANELS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Glass fiber reinforced plastic panels.
- B. Trim.

1.02 REFERENCE STANDARDS

- A. ASTM D5319 - Standard Specification for Glass-Fiber Reinforced Polyester Wall and Ceiling Panels; 2012.
- B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics; including sizes, patterns and colors available; and installation instructions.
- C. Samples: Submit two samples 6 by 6 inch (____by____ mm) in size illustrating material and surface design of panels.

1.04 DELIVERY, STORAGE, AND HANDLING

- A. Store panels flat, indoors, on a clean, dry surface. Remove packaging and allow panels to acclimate to room temperature for 48 hours prior to installation.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Glass Fiber Reinforced Plastic Panels:
 - 1. Marlite; Induro FRP: www.marlite.com.

2.02 PANEL SYSTEMS

- A. Ceiling:
 - 1. Panel Size: 48 x120 inch (____ mm).
 - 2. Panel Thickness: 0.09 inch (2.3 mm).
 - 3. Surface Design: Smooth.
 - 4. Color: As selected by Owner.

2.03 MATERIALS

- A. Panels: Glass fiber reinforced plastic (FRP), complying with ASTM D5319.
 - 1. Surface Burning Characteristics: Maximum flame spread index of 25 and smoke developed index of 450; when system tested in accordance with ASTM E84.
- B. Trim: Vinyl; color coordinating with panel.
- C. Adhesive: Type recommended by panel manufacturer.
- D. Sealant: Type recommended by panel manufacturer; color matching panel.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions and substrate flatness before starting work.
- B. Verify that substrate conditions are ready to receive the work of this section.

3.02 INSTALLATION - CEILINGS

- A. Provide shop drawings indicating seaming and pattern layout at ceiling for review and approval by architect.

END OF SECTION

SECTION 09 9000
PAINTING AND COATING

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Surface preparation.
- B. Field application of paints.
- C. Scope: Finish all interior and exterior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated.
 - 1. Mechanical and Electrical:
 - a. In finished areas, paint all insulated and exposed pipes, conduit, boxes, insulated and exposed ducts, hangers, brackets, collars and supports, mechanical equipment, and electrical equipment, unless otherwise indicated.
 - b. On the roof and outdoors, paint all equipment that is exposed to weather or to view.
- D. Do Not Paint or Finish the Following Items:
 - 1. Items fully factory-finished unless specifically so indicated; materials and products having factory-applied primers are not considered factory finished.
 - 2. Items indicated to receive other finishes.
 - 3. Items indicated to remain unfinished.
 - 4. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.
 - 5. Floors, unless specifically so indicated.
 - 6. Brick, architectural concrete, cast stone, stone, integrally colored plaster and stucco.
 - 7. Glass.
 - 8. Concealed pipes, ducts, and conduits.

1.02 REFERENCE STANDARDS

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on all finishing products, including VOC content.
- C. Samples: Submit two painted samples, illustrating selected colors and textures for each color and system selected . Submit on pertinent substrate, 6 x 6 inch (____x____ mm) in size.
- D. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
 - 1. See Section 01 6000 - Product Requirements, for additional provisions.
 - 2. Extra Paint and Coatings: 1 gallon (4 L) of each color; store where directed.
 - 3. Label each container with color in addition to the manufacturer's label.

1.04 QUALITY ASSURANCE

- A. Applicator Qualifications: Company specializing in performing the type of work specified with minimum 3 years experience.

1.05 REGULATORY REQUIREMENTS

- A. Conform to applicable code for flame and smoke rating requirements for products and finishes.

1.06 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Paint Materials: Store at minimum ambient temperature of 45 degrees F (7 degrees C) and a maximum of 90 degrees F (32 degrees C), in ventilated area, and as required by manufacturer's instructions.

1.07 FIELD CONDITIONS

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.
- B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
- C. Do not apply exterior coatings during rain or snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.
- D. Provide lighting level of 80 ft candles (860 lx) measured mid-height at substrate surface.

1.08 EXTRA MATERIALS

- A. Supply 1 gallon (4 L) of each color; store where directed.
- B. Label each container with color in addition to the manufacturer's label.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Provide all paint and coating products used in any individual system from the same manufacturer; no exceptions.
- B. Paints:
 - 1. Sherwin-Williams Co: www.sherwin-williams.com.
- C. Transparent Finishes:
 - 1. Cabot Stains.
 - 2. Sherwin Williams Co.

2.02 PAINTS AND COATINGS - GENERAL

- A. Paints and Coatings: Ready mixed, unless intended to be a field-catalyzed coating.
 - 1. Provide paints and coatings of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
 - 2. Supply each coating material in quantity required to complete entire project's work from a single production run.
 - 3. Do not reduce, thin, or dilute coatings or add materials to coatings unless such procedure is specifically described in manufacturer's product instructions.
- B. Primers: As follows unless other primer is required or recommended by manufacturer of top coats; where the manufacturer offers options on primers for a particular substrate, use primer categorized as "best" by the manufacturer.
- C. Colors: To be selected from manufacturer's full range of available colors.
 - 1. Selection to be made by Architect after award of contract.
 - 2. Allow for minimum of two colors for each system, unless otherwise indicated, without additional cost to Owner.
 - 3. In finished areas, finish pipes, ducts, conduit, and equipment the same color as the wall/ceiling they are mounted on/under.

2.03 PAINT SYSTEMS - EXTERIOR

- A. Transparent Finish on Concrete Floors, Unless Otherwise Indicated:
 - 1. 2 coats sealer.
- B. Wood, Transparent, water based Sealer, Optional Stain:
 - 1. Two coats of clear sealer.
- C. Cementitious Fiber Board (James Hardi Products) or Engineered Wood Fiber Siding (LP SmartSide Siding)
 - 1. Prefinished/Factory Applied Finish with Pittsburg Paint & Glass (PPG) or Diamond Kote.
- D. Ferrous Metals, Unprimed, Latex, 4 Coat:
 - 1. Two coats of latex primer.

2. Semi-gloss: Two coats of latex enamel.
- E. Galvanized Metals, Latex, 4 Coat:
 1. Two coats galvanize primer.
 2. Semi-gloss: Two coats of latex enamel; .

2.04 PAINT SYSTEMS - INTERIOR

- A. Wood, Opaque, Latex, 2 Coat:
 1. One coat of latex primer sealer.
- B. Concrete/Masonry, Opaque, Latex, 3 Coat:
 1. One coat of block filler.
 2. Two coats of catalyzed epoxy primer.
 3. Satin: Two coats of catalyzed epoxy enamel.
- C. Ferrous Metals, Unprimed, Acrylic Latex, 3 Coat:
 1. One coat of latex primer.
 2. Semi-gloss: Two coats of latex enamel.
- D. Ferrous Metals, Primed, Acrylic Latex, 2 Coat:
 1. Touch-up with latex primer.
 2. Semi-gloss: Two coats of latex enamel.
- E. Gypsum Board, Epoxy Enamel, 3 Coat.
 1. One coat of catalyzed epoxy primer.
 2. Satin: Two coats of catalyzed epoxy enamel; .

2.05 ACCESSORY MATERIALS

- A. Accessory Materials: Provide all primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials required to achieve the finishes specified whether specifically indicated or not; commercial quality.
- B. Patching Material: Latex filler.
- C. Fastener Head Cover Material: Latex filler.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

3.02 PREPARATION

- A. Clean surfaces thoroughly and correct defects prior to coating application.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.
- D. Surfaces: Correct defects and clean surfaces which affect work of this section. Remove or repair existing coatings that exhibit surface defects.
- E. Seal surfaces that might cause bleed through or staining of topcoat.
- F. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.
- G. Concrete and Unit Masonry Surfaces to be Painted: Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter. Remove oil and grease with a solution of tri-sodium phosphate; rinse well and allow to dry. Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry.

- H. Gypsum Board Surfaces to be Painted: Fill minor defects with filler compound. Spot prime defects after repair.
- I. Galvanized Surfaces to be Painted: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.
- J. Uncorroded Uncoated Steel and Iron Surfaces to be Painted: Remove grease, mill scale, weld splatter, dirt, and rust. Where heavy coatings of scale are evident, remove by hand wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Prime paint entire surface; spot prime after repairs.
- K. Shop-Primed Steel Surfaces to be Finish Painted: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces.
- L. Interior Wood Surfaces to Receive Opaque Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats. Back prime concealed surfaces before installation.

3.03 APPLICATION

- A. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
- B. Apply products in accordance with manufacturer's instructions.
- C. Where adjacent sealant is to be painted, do not apply finish coats until sealant is applied.
- D. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.
- E. Apply each coat to uniform appearance.
- F. Sand wood and metal surfaces lightly between coats to achieve required finish.
- G. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.
- H. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.04 CLEANING

- A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

3.05 SCHEDULE - SURFACES TO BE FINISHED

- A. Do Not Paint or Finish the Following Items:
 - 1. Items fully factory-finished unless specifically noted.
 - 2. Fire rating labels, equipment serial number and capacity labels.
- B. Mechanical and Electrical: Use paint systems defined for the substrates to be finished.
 - 1. Paint all insulated and exposed pipes occurring in finished areas to match background surfaces, unless otherwise indicated.
 - 2. Paint shop-primed items occurring in finished areas.

END OF SECTION

SECTION 10 2800
TOILET, BATH, AND LAUNDRY ACCESSORIES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Accessories for toilet rooms and utility rooms.
- B. Electric hand/hair dryers.
- C. Grab bars.

1.02 REFERENCE STANDARDS

- A. ASTM F2285 - Standard Consumer Safety Performance Specification for Diaper Changing Tables for Commercial Use; 2004 (Reapproved 2010).

1.03 ADMINISTRATIVE REQUIREMENTS

- A. Coordinate the work with the placement of internal wall reinforcement to receive anchor attachments.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Submit data on accessories describing size, finish, details of function, and attachment methods.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Basis of Design: Bobrick: www.bobrick.com.

2.02 MATERIALS

- A. Accessories - General: Shop assembled, free of dents and scratches and packaged complete with anchors and fittings, steel anchor plates, adapters, and anchor components for installation.
- B. Adhesive: Two component epoxy type, waterproof.
- C. Fasteners, Screws, and Bolts: Hot dip galvanized; tamper-proof; security type.

2.03 FINISHES

- A. Stainless Steel: No. 4 Brushed finish, unless otherwise noted.

2.04 TOILET ROOM ACCESSORIES

- A. Toilet Paper Dispenser: Large roll dispenser supplied by Owner, installed by GC.
- B. Electric Dryers: Traditional fan-in-case type, with downward nozzle.
 - 1. Operation: Automatic, sensor-operated on and off.
 - 2. Mounting: Surface mounted.
 - 3. Cover: White plastic.
 - a. Tamper-resistant screw attachment of cover to mounting plate.
 - 4. Warranty: 3 years.
 - 5. Electric Hand Dryer Products:
 - a. Excel Dryer Inc.; XLERATOReco: www.exceldryer.com.
 - b. XL-BW.
- C. Soap Dispenser: Supplied by Owner and installed by General Contractors.
- D. Mirrors: Frameless Stainless Steel
 - 1. Product: B-1556 manufactured by Bobrick
 - 2. Size: 18 x 30
- E. Grab Bars: Stainless steel, nonslip grasping surface finish.
 - 1. Standard Duty Grab Bars:
 - a. Push/Pull Point Load: 250 pound-force (1112 N), minimum.

- b. Dimensions: 1-1/4 inch (32 mm) outside diameter, minimum 0.05 inch (1.3 mm) wall thickness, exposed flange mounting, 1-1/2 inch (38 mm) clearance between wall and inside of grab bar.
 - c. Location, Length and Configuration: As indicated on drawings.
 - d. Products:
 - 1) Product: B-5806 manufactured by Bobrick..
- F. Sanitary Napkin Disposal Unit: Stainless steel, surface-mounted, self-closing door, locking bottom panel with full-length stainless steel piano-type hinge, removable receptacle.
 - 1. Product: B-254 manufactured by Bobrick.
- G. Diaper Changing Station: Wall-mounted folding diaper changing station for use in commercial toilet facilities, meeting or exceeding ASTM F2285.
 - 1. Style: Vertical.
 - 2. Mounting: Surface.
 - 3. Manufacturers:
 - a. Koala Kare Products; KB111-SSWM: www.koalabear.com.
 - b. Or Equal.

2.05 UTILITY ROOM ACCESSORIES

- A. Mop and Broom Holder: 0.05 inch (1.3 mm) thick stainless steel, Type 304, hat-shaped channel.
 - 1. Length: 36 inches (900 mm).
 - 2. Product: B-223 manufactured by Bobrick.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.
- B. Verify exact location of accessories for installation.
- C. For electrically-operated accessories, verify that electrical power connections are ready and in the correct locations.

3.02 INSTALLATION

- A. Install accessories in accordance with manufacturers' instructions in locations indicated on the drawings.
- B. Install plumb and level, securely and rigidly anchored to substrate.
- C. Mounting Heights: As required by accessibility regulations, unless otherwise indicated.

3.03 PROTECTION

- A. Protect installed accessories from damage due to subsequent construction operations.

END OF SECTION

SECTION 10 4400
FIRE PROTECTION SPECIALTIES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Fire extinguishers.
- B. Accessories.

1.02 REFERENCE STANDARDS

- A. NFPA 10 - Standard for Portable Fire Extinguishers; 2013.

PART 2 PRODUCTS

2.01 MANUFACTURERS

- A. Fire Extinguishers:
 - 1. JL Industries: www.activarxpg.com.
 - 2. Substitutions: See Section 01 6000 - Product Requirements.

2.02 FIRE EXTINGUISHERS

- A. Fire Extinguishers - General: Comply with product requirements of NFPA 10 and applicable codes, whichever is more stringent.
- B. Multipurpose Dry Chemical Type Fire Extinguishers: Carbon steel tank, with pressure gage.
 - 1. JL Industries Cosmic Series.
 - 2. Class: A:B:C type.
 - 3. Size: 10 pound (4.54 kg).
 - 4. Temperature range: Minus 40 degrees F (Minus 40 degrees C) to 120 degrees F (___ degrees C).

2.03 ACCESSORIES

- A. Extinguisher Brackets: Formed steel, galvanized and enamel finished.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify existing conditions before starting work.

3.02 INSTALLATION

- A. Install in accordance with manufacturer's instructions.

END OF SECTION

CONSTRUCTION DOCUMENTS FOR

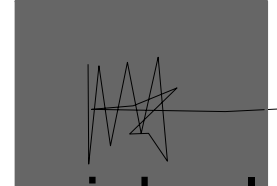
St. Croix County - River Loop Crossing - Restroom Building

77 Houlton School Circle, Houlton, Wisconsin 54082

New Construction



St. Croix County
River Loop
Crossing
Restroom Bldg.
New Construction
77 Houlton School Circle
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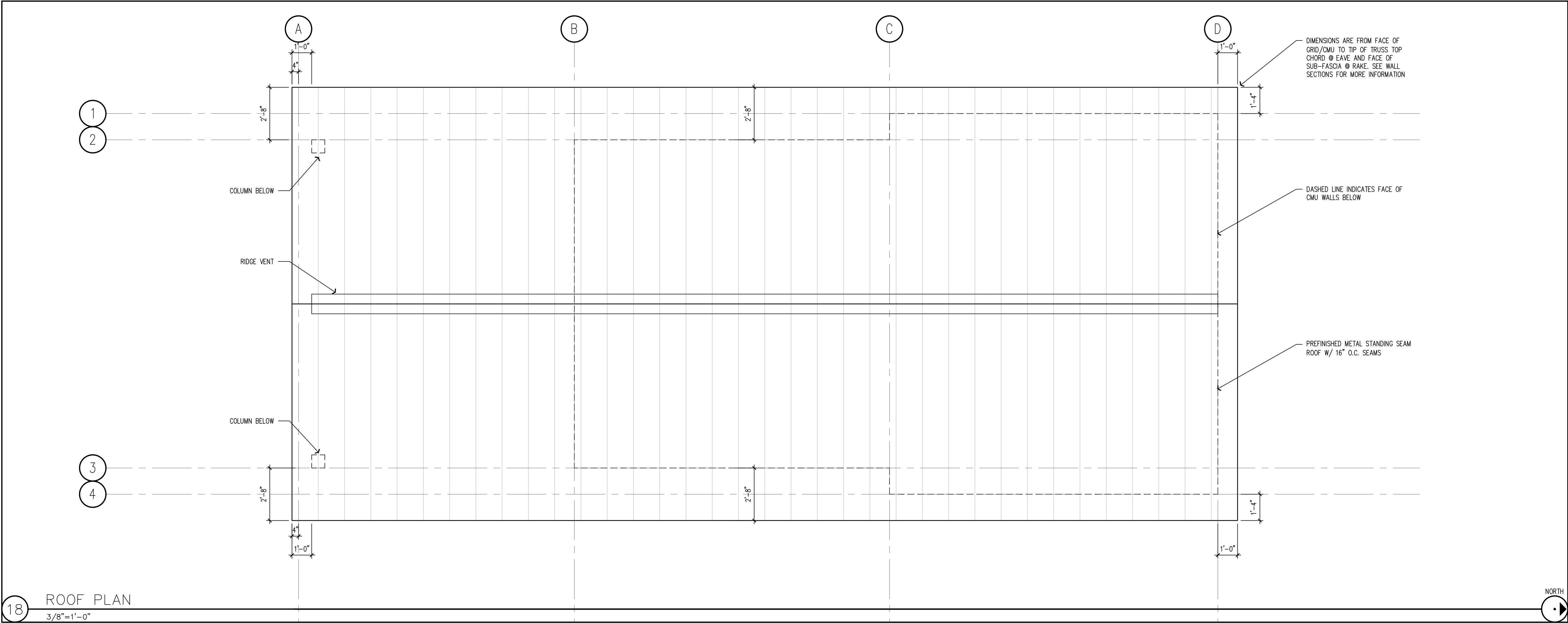
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Project No.: 17-01.0
Date: 1.26.18
Revisions:

BID SET
Title
TITLE SHEET/ROOF PLAN

Sheet Number
A-101



General Notes:

- All architectural, structural, mechanical, electrical and plumbing work shall meet applicable codes.
- All dimensions shall be verified by the contractor. Do not scale the drawings.
- Coordinate building elevation 100'-0" with DOT site drawings.
- Perimeter dimensions are to face of CMU-typical unless noted otherwise. See building sections and wall sections for more specific information about relationship of foundation walls and cladding to layout grids.
- Contractor to verify existing site conditions and provide necessary adjustment for construction to be completed within the intent of the design.
- Basis of design for attic access hatch is "Battic Door" R42 E-Z Hatch with 4-point latch system.
<http://www.batticdoor.com/atticaccessdoor.htm>

Code Summary:

Review based on:
2009 International Building Code & Wisconsin Amendments
2009 International Energy Conservation Code
Americans with Disabilities Act

Building is not sprinklered.

Occupancy Type (IBC Chapter 3):
Group U Restroom/Storage Building

Construction Type (IBC Chapter 6 & Table 601)
Type V-B
One Story

Occupant Load (IBC Chapter 10 and table 1003.2.2.2)
Building is an accessory structure to the park and does not have a specific occupant load.

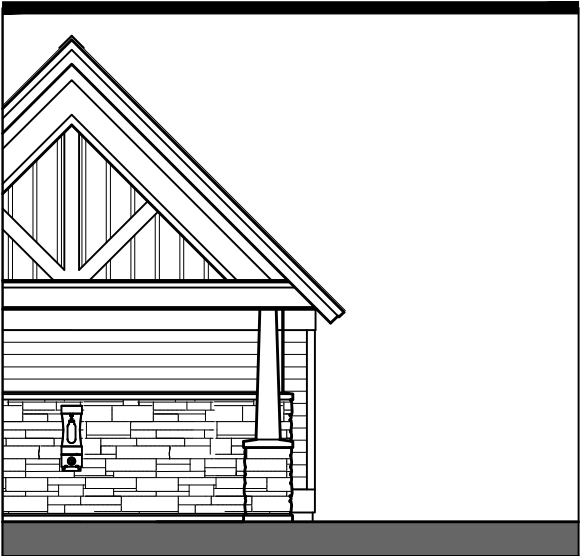
Proposed Building Area (Area within exterior walls exclusive of vent shafts, interior walls and courts)
Main Level: 520 SF

Area Calculations (Per IBC 506.1)
Basic Allowable (Table 503) 5500 SF


Plumbing Fixture Calculations (IBC Chapter 29)
Restroom building does not have any occupants specific to the building. 4 unisex bathrooms are provided with 1 toilet, 1 lavatory each.
2 future bathrooms with 1 toilet, 1 lavatory will be roughed-in for future finishing. 1 Service sink is provided in the mechanical room and one drinking fountain/bottle filler is provided on the exterior.

Sheet Index:

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A-501	WINDOW/DOOR TYPES & DETAILS. INTERIOR ELEVATIONS		
S-001	STRUCTURAL NOTES		
S-101	ROOF FRAMING PLAN & FOUNDATION PLAN		

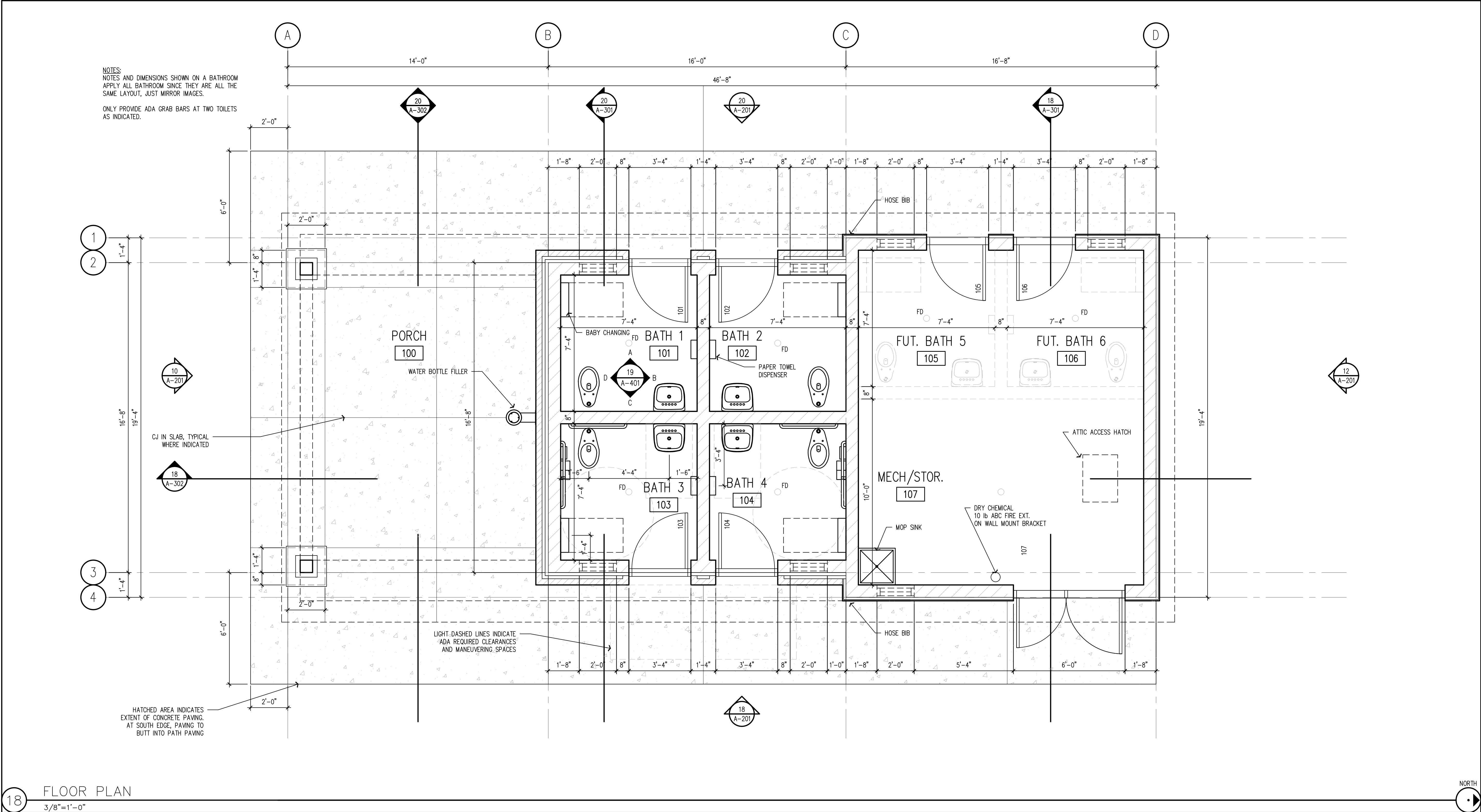


St. Croix County
River Loop
Crossing
Restroom Bldg.
New Construction
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Houlton, WI 54082

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DOOR & FRAME SCHEDULE											
MARK	LOCATION	DOOR/WINDOW				FRAME				HARDWARE GROUP	REMARKS
		SIZE	TYPE	MATERIAL	FINISH	TYPE	MATERIAL	FINISH	DETAIL		
101	BATH 1	3'-0"x7'-0"	A	HOLLOW METAL	PT.	1	H.M.	PT.		02	
102	BATH 2	3'-0"x7'-0"	A	HOLLOW METAL	PT.	1	H.M.	PT.		02	
103	BATH 3	3'-0"x7'-0"	A	HOLLOW METAL	PT.	1	H.M.	PT.		02	
104	BATH 4	3'-0"x7'-0"	A	HOLLOW METAL	PT.	1	H.M.	PT.		02	
105	FUTURE BATH 5	3'-0"x7'-0"	A	HOLLOW METAL	PT.	1	H.M.	PT.		02	
106	FUTURE BATH 6	3'-0"x7'-0"	A	HOLLOW METAL	PT.	1	H.M.	PT.		02	
107	MECH./STOR.	5'-8"x7'-0"	A	HOLLOW METAL	PT.	2	H.M.	PT.		01	3'-0" ACTIVE LEAF ON NORTH, 2'-8" LEAF ON SOUTH. KEYED REMOVABLE MULLION.

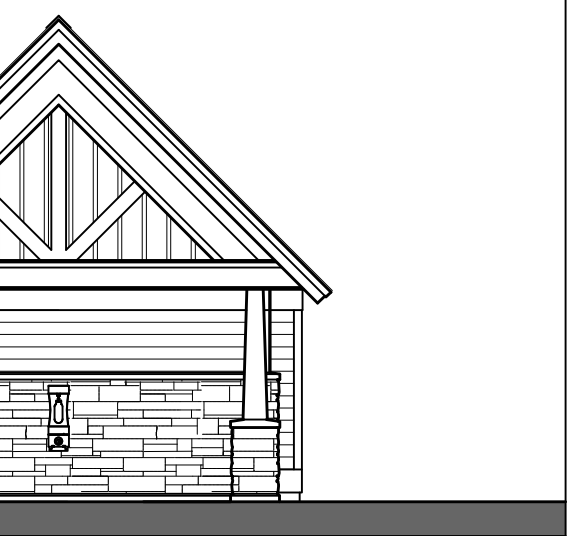
ROOM FINISH SCHEDULE													
ROOM	ROOM NAME	FLOOR		BASE		WALLS							
		MATERIAL	FINISH	MATERIAL	FINISH	NORTH		EAST		SOUTH		WEST	
						MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH	MATERIAL	FINISH
						STONE/SIDING	--/PT.	CMU	PT.	CMU	PT.	CMU	PT.
100	PORCH	CONC.	BROOM			STONE/SIDING	--/PT.	CMU	PT.	CMU	PT.	T&G WOOD	STN.
101	BATH 1	CONC.	EPOXY QUARTZ			CMU	PT.	CMU	PT.	CMU	PT.	GWB	PT.
102	BATH 2	CONC.	EPOXY QUARTZ			CMU	PT.	CMU	PT.	CMU	PT.	GWB	PT.
103	BATH 3	CONC.	EPOXY QUARTZ			CMU	PT.	CMU	PT.	CMU	PT.	GWB	PT.
104	BATH 4	CONC.	EPOXY QUARTZ			CMU	PT.	CMU	PT.	CMU	PT.	GWB	PT.
105	FUTURE BATH 5	CONC.	SEAL			CMU	PT.	CMU	PT.	CMU	PT.	GWB	PT.
106	FUTURE BATH 6	CONC.	SEAL			CMU	PT.	CMU	PT.	CMU	PT.	GWB	PT.
107	MECH./STOR.	CONC.	SEAL			CMU	PT.	CMU	PT.	CMU	PT.	GWB	PT.

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Project No.: 17-01.0
Date: 1.26.18
Revisions:


BID SET
Title
PLANS

Sheet Number
A-102



St. Croix County
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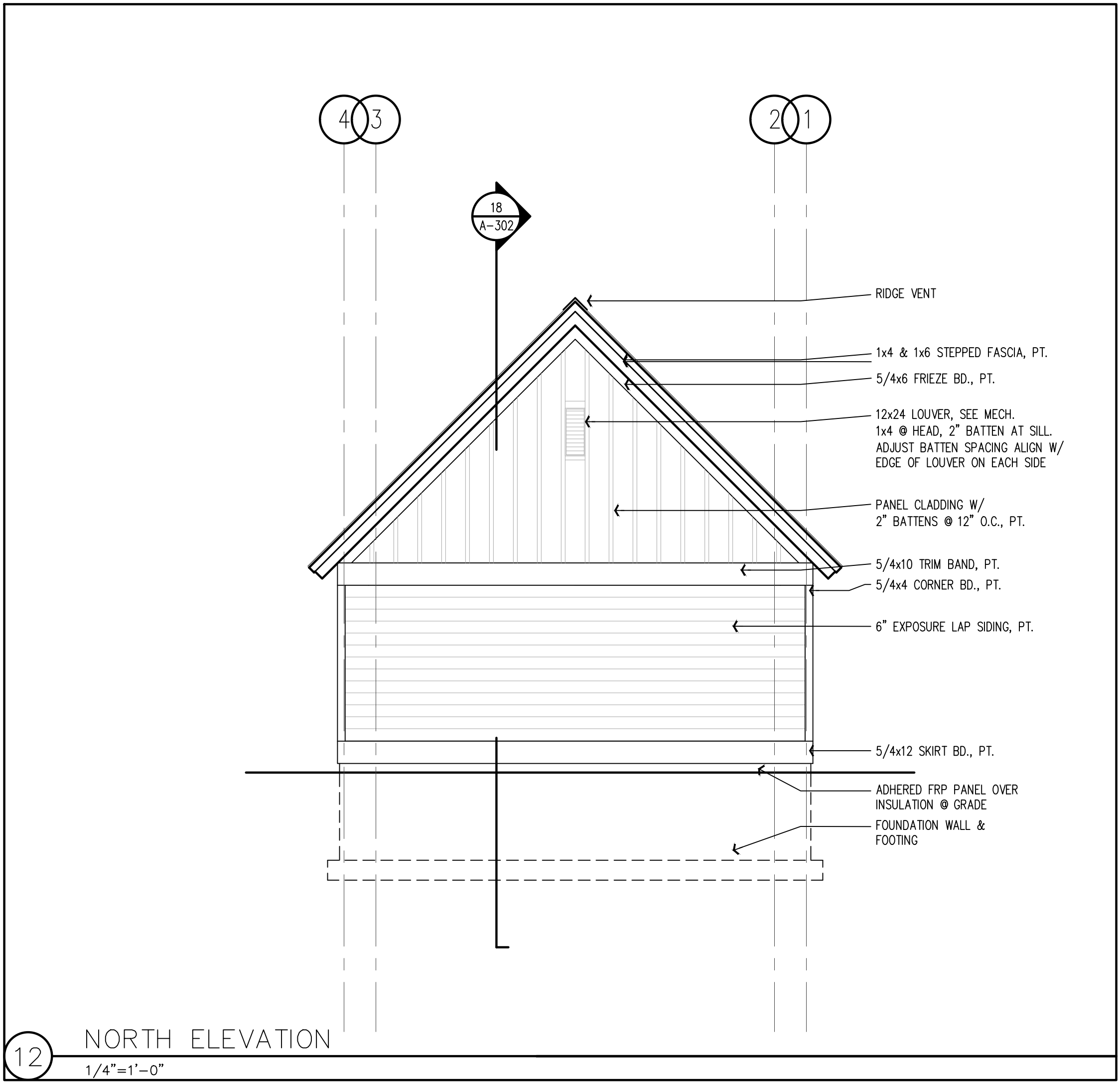
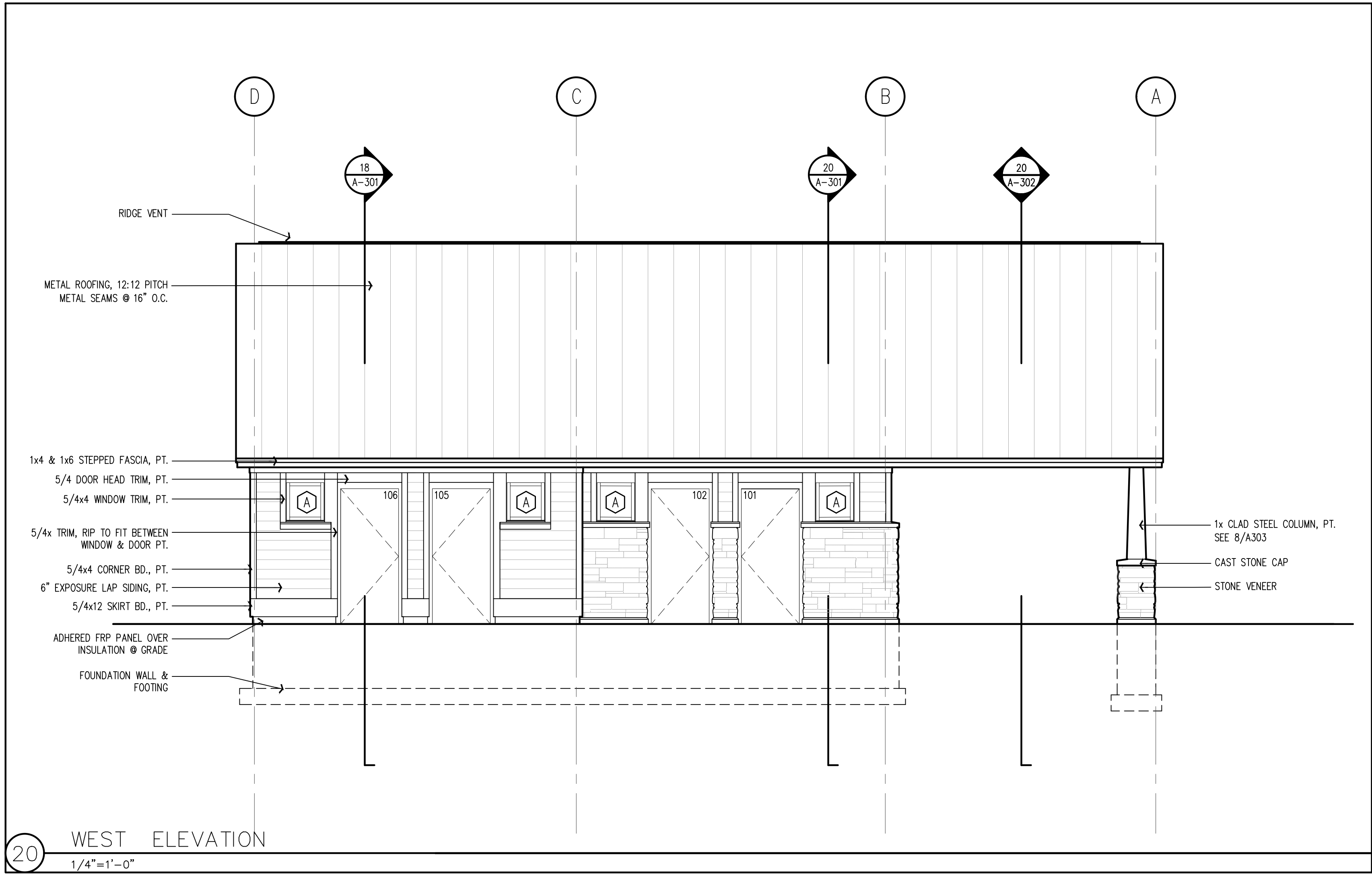
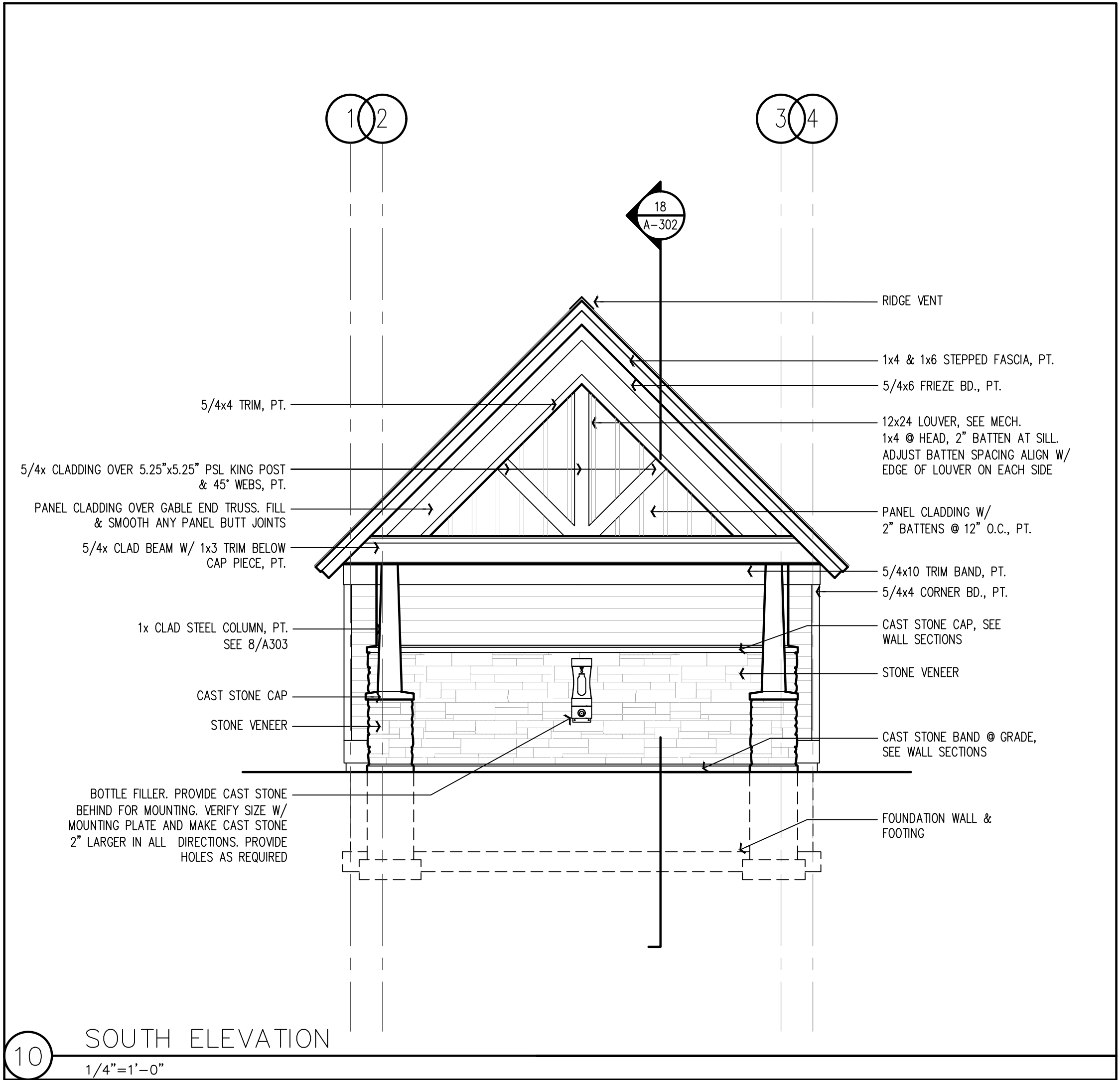
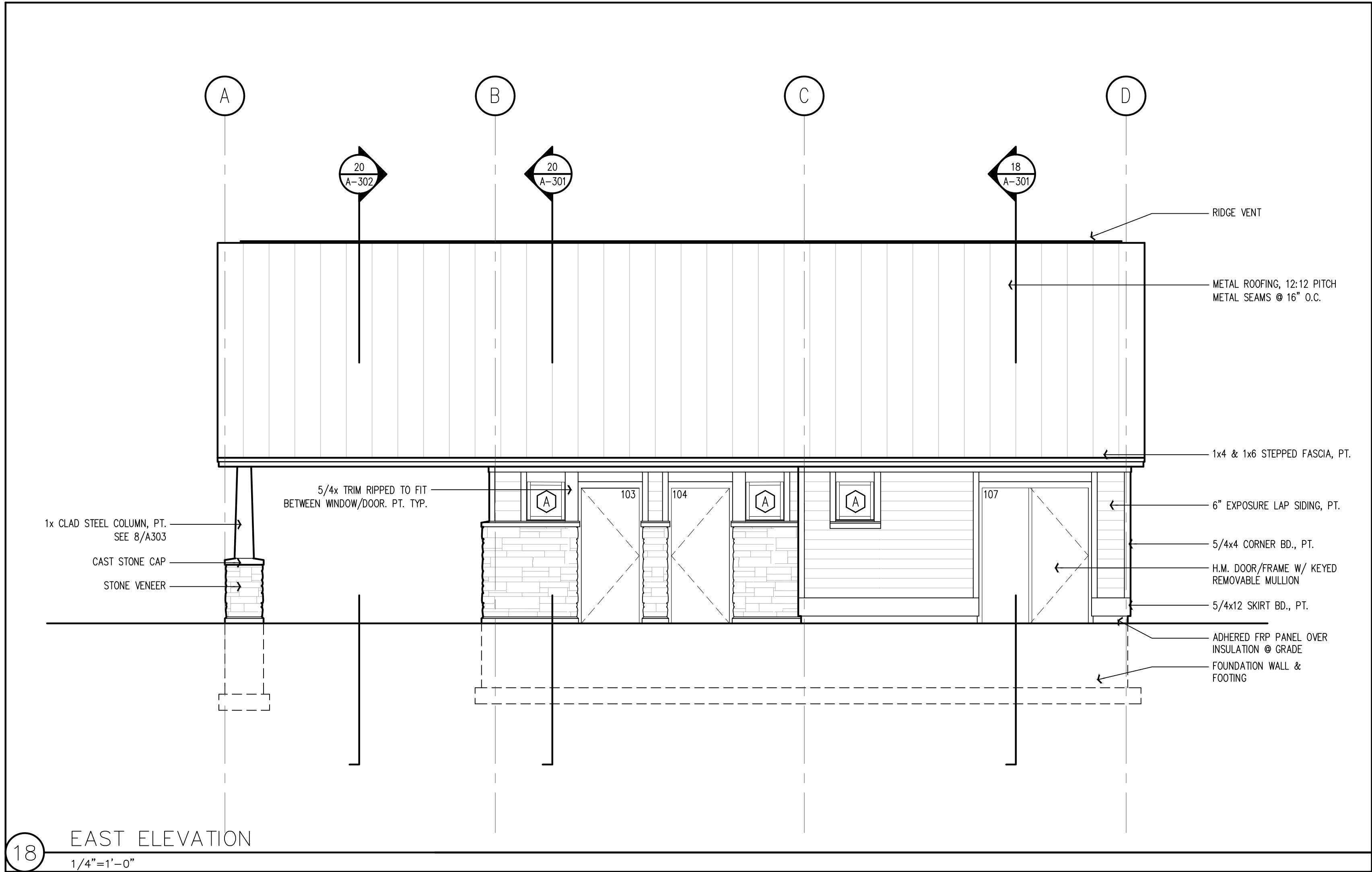
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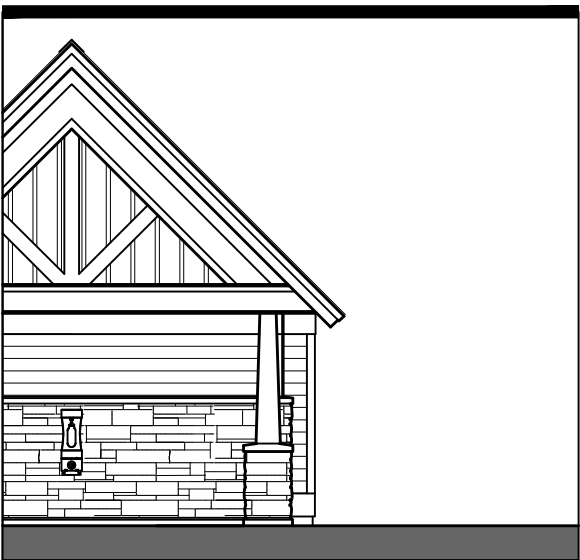
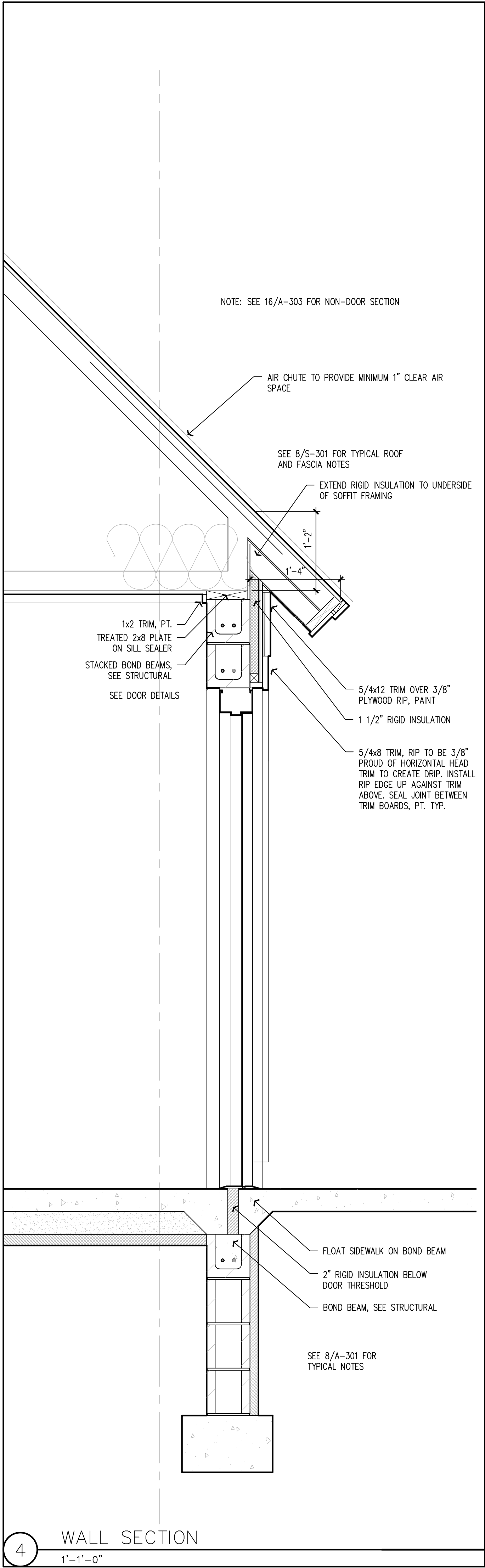
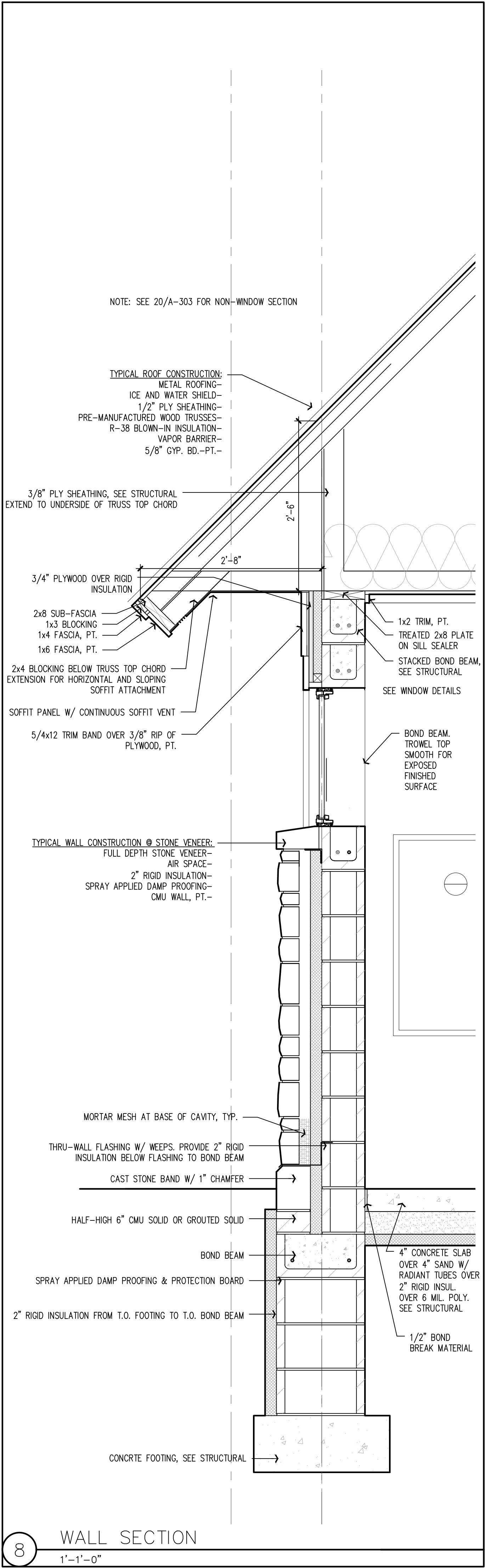
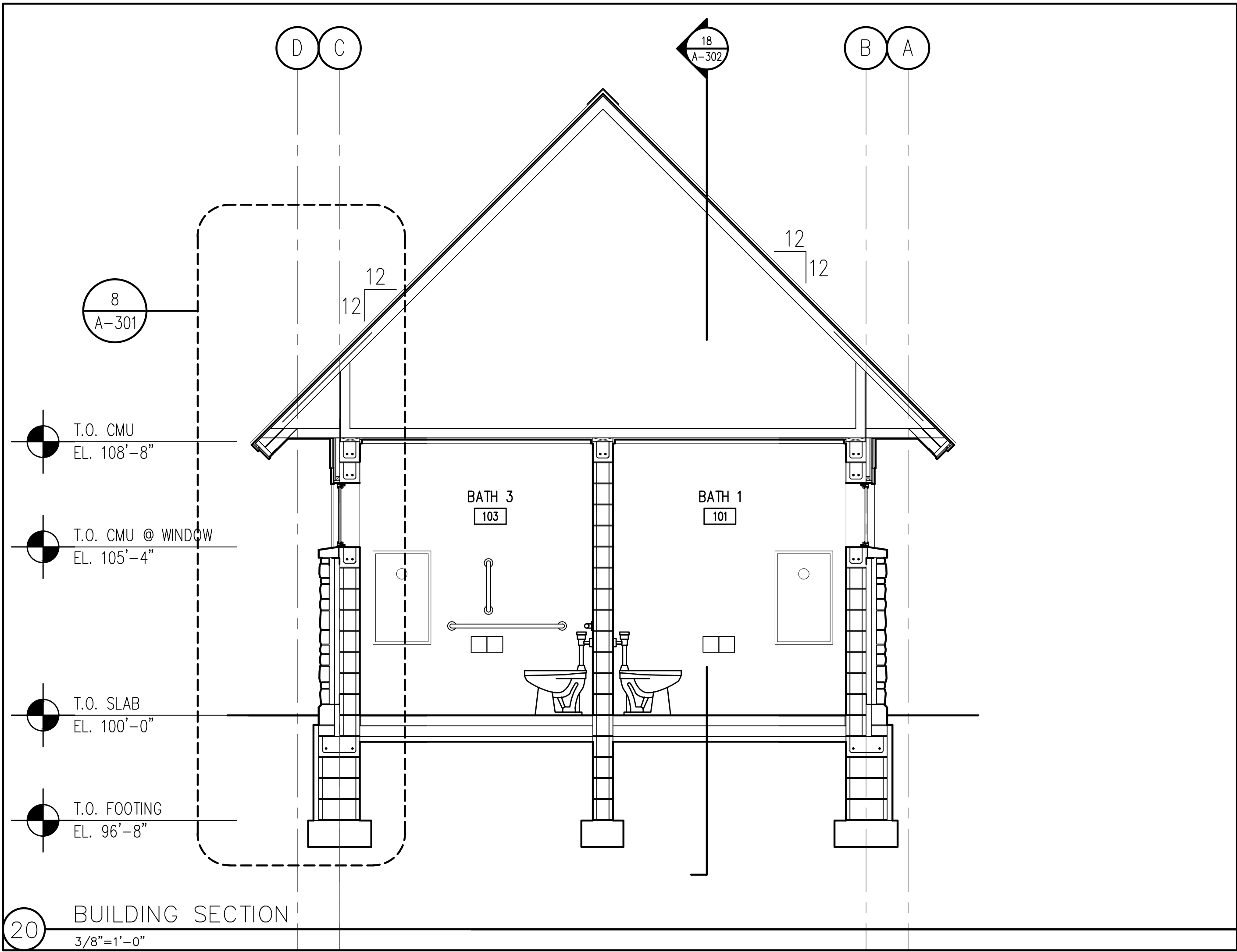
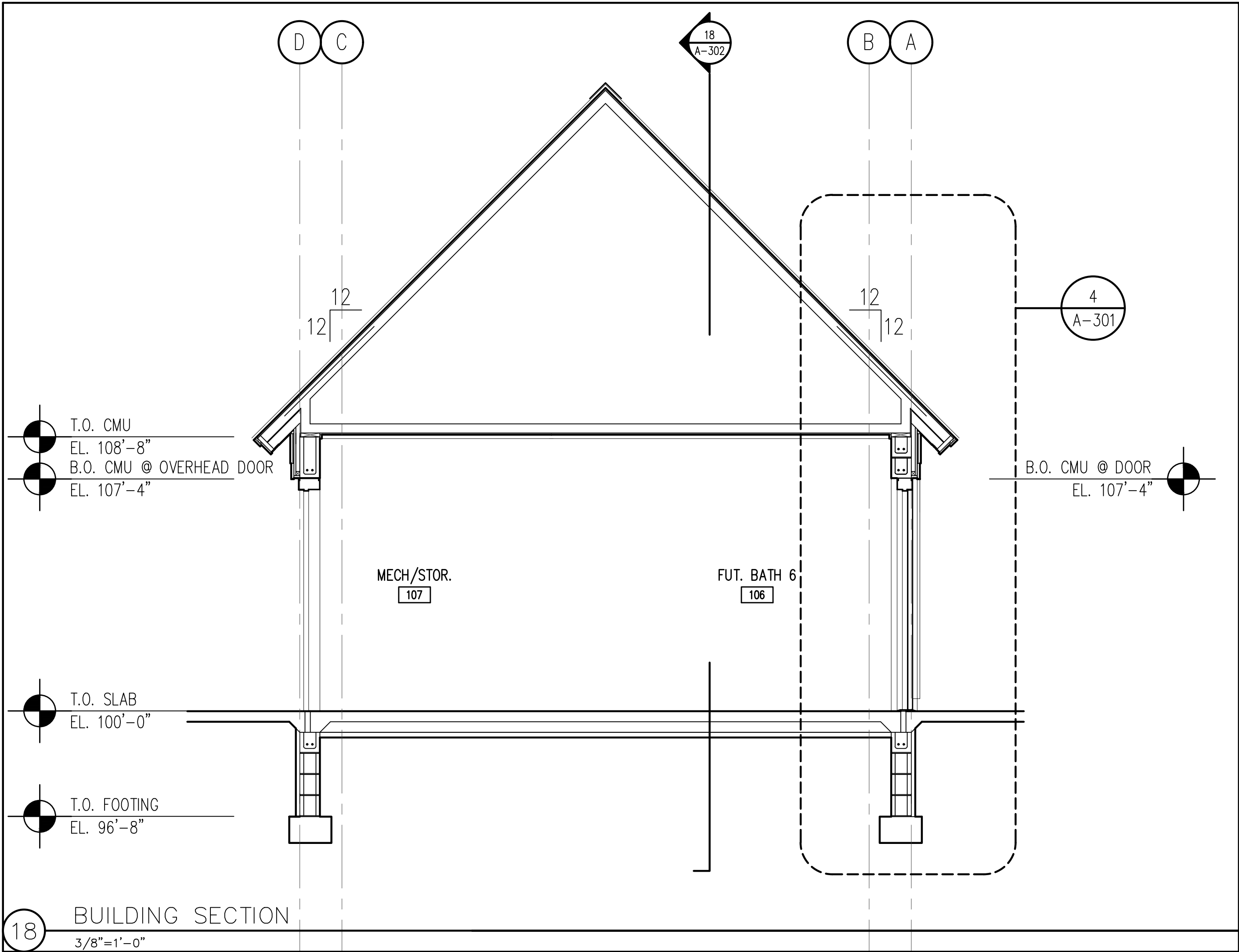
Project No.: 17-01.0
Date: 1.26.18
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BID SET
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**EXTERIOR
ELEVATIONS**


Sheet Number

A-201





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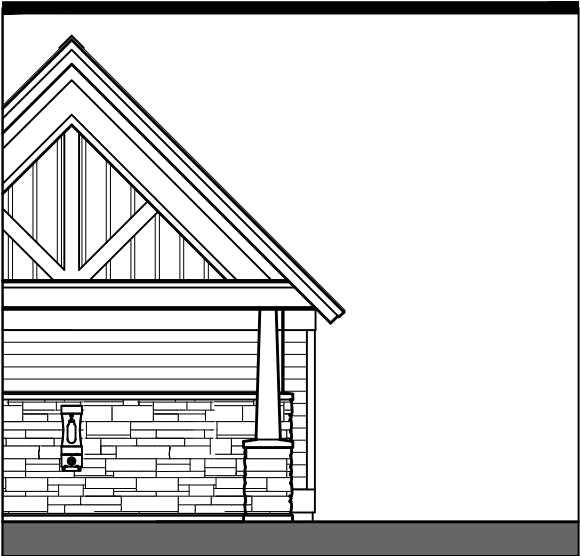
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Project No.: 17-01.0
Date: 1.26.18
Revisions:

BID SET
Title
SECTIONS 1


Sheet Number

A-301



St. Croix County
River Loop
Crossing
Restroom Bldg.
New Construction

77 Houlton School Circle
Houlton, WI 54082

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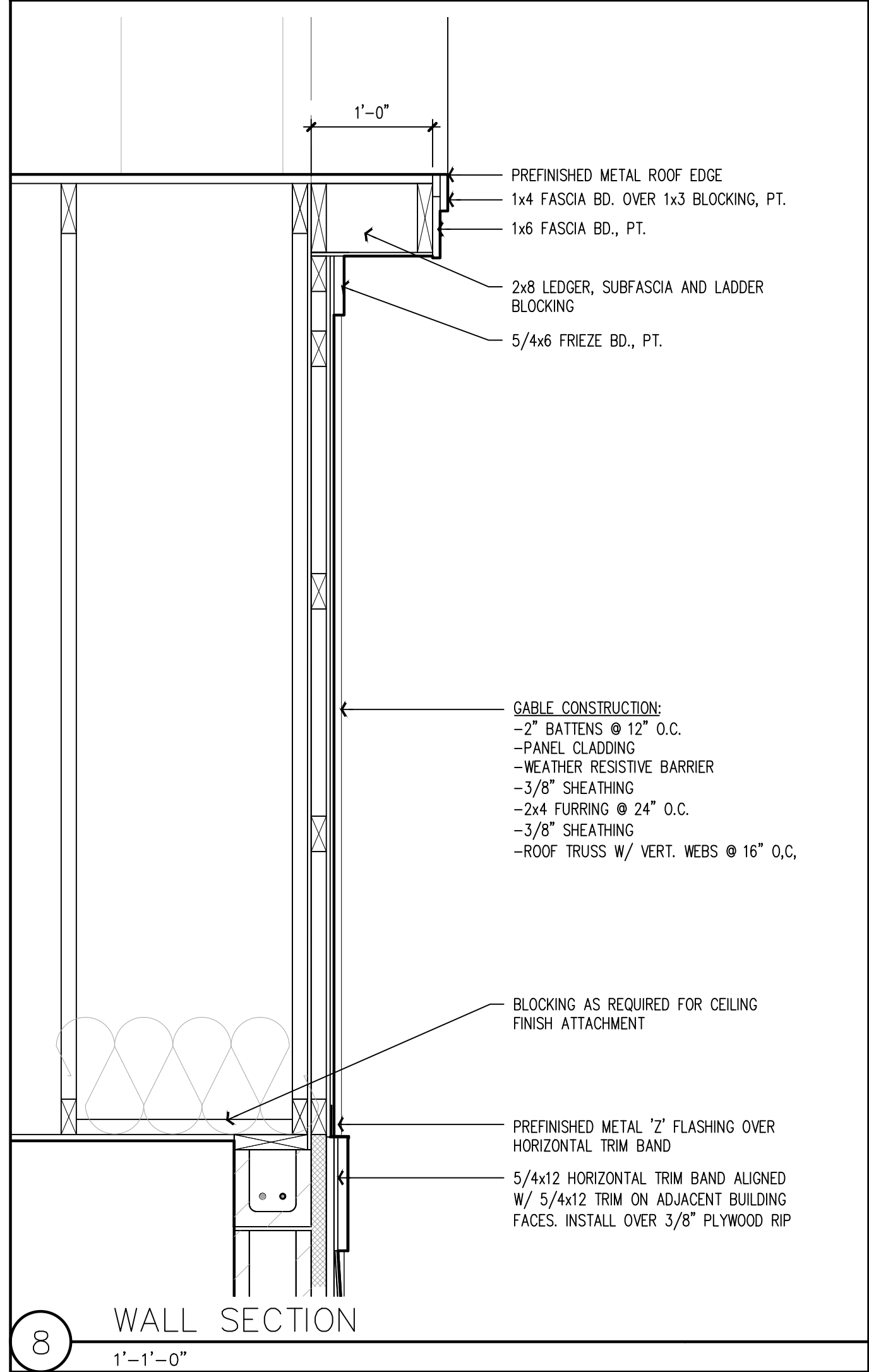
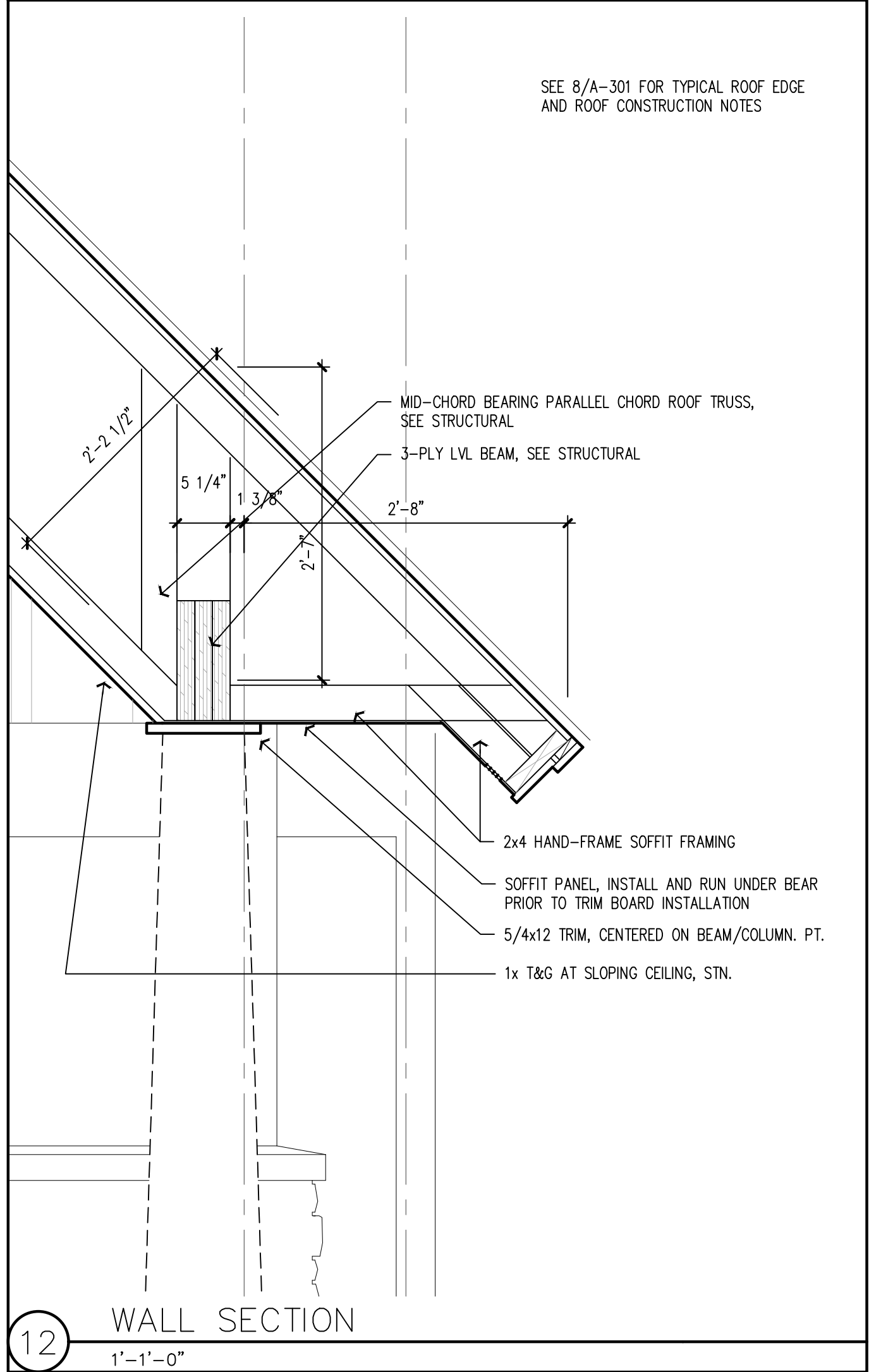
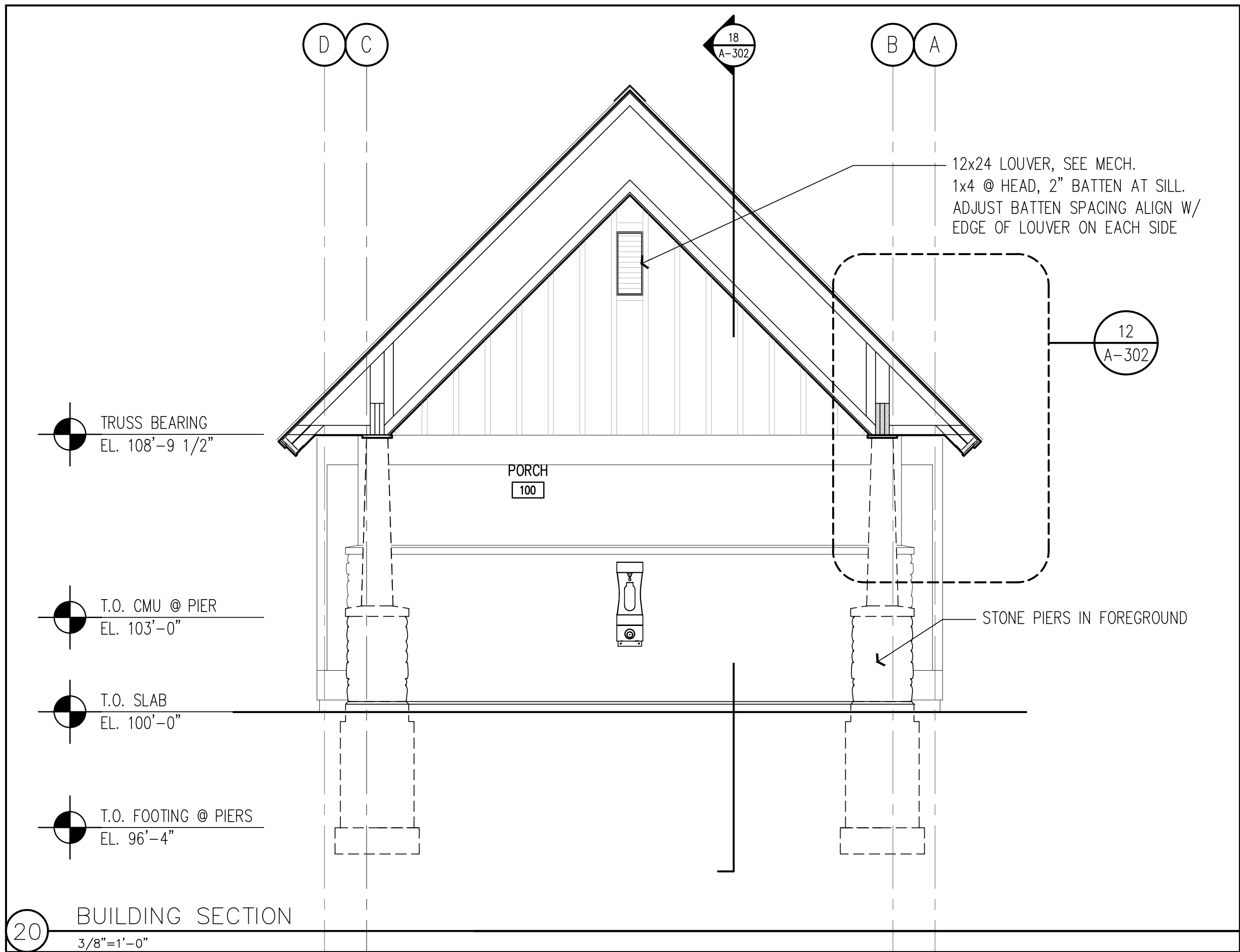
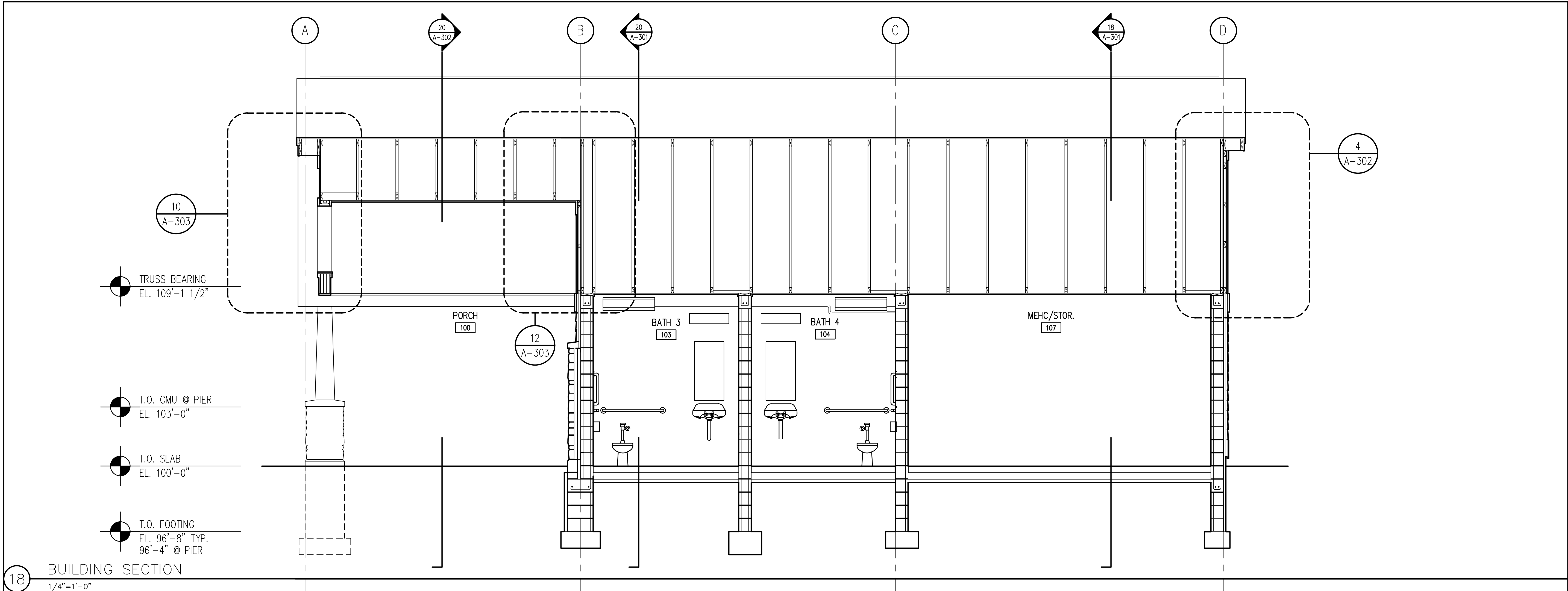
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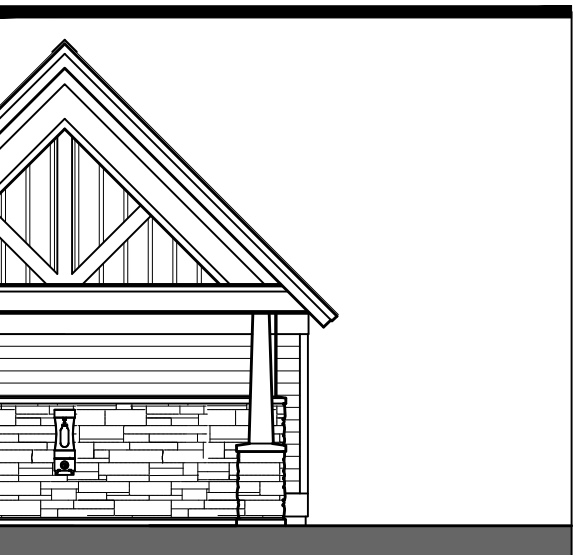
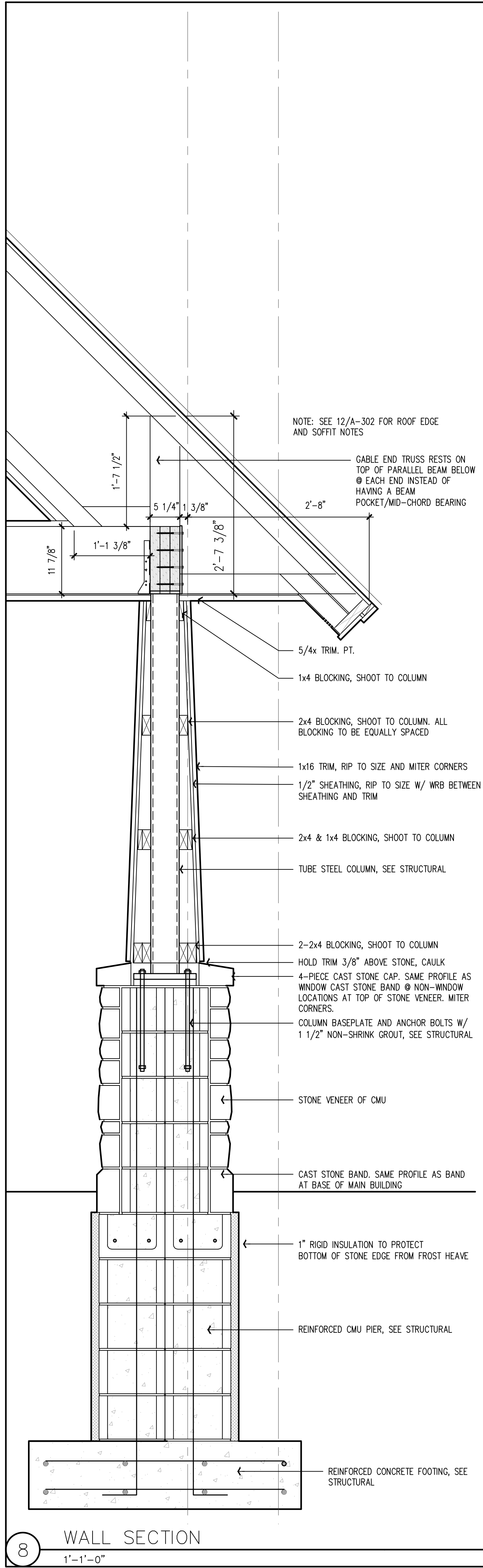
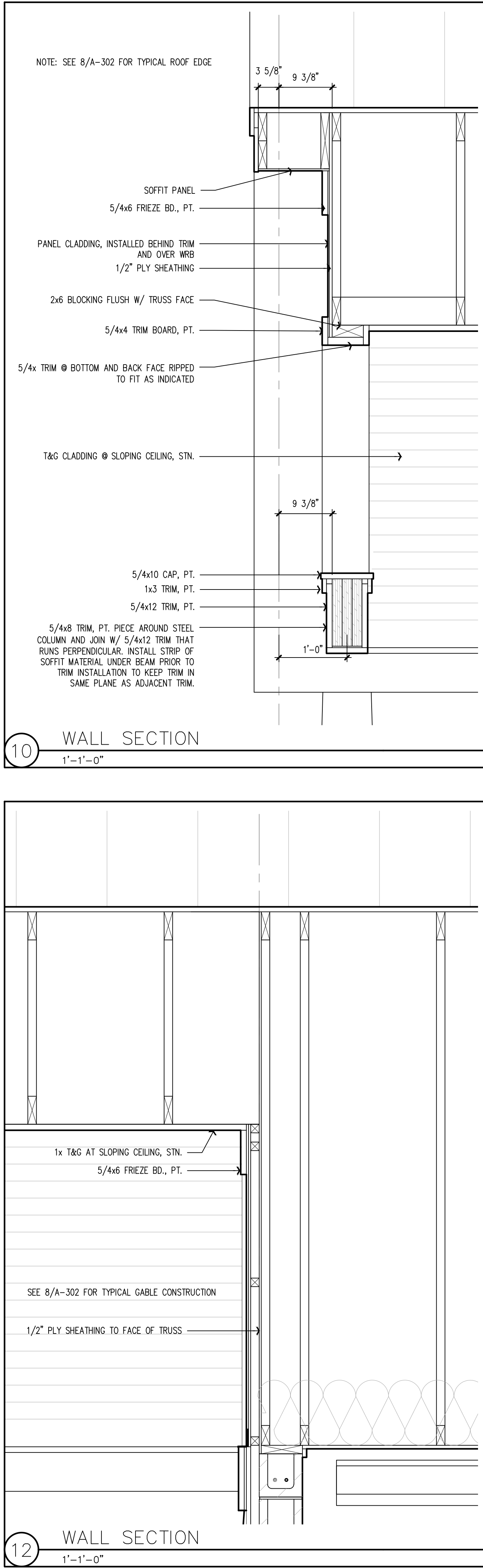
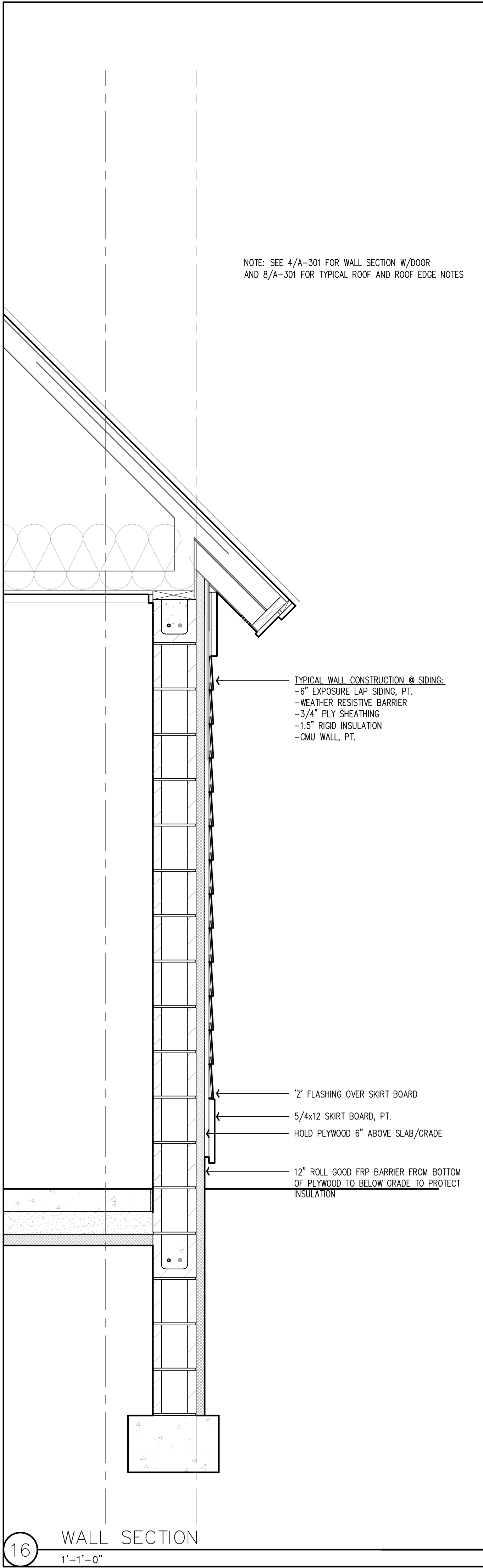
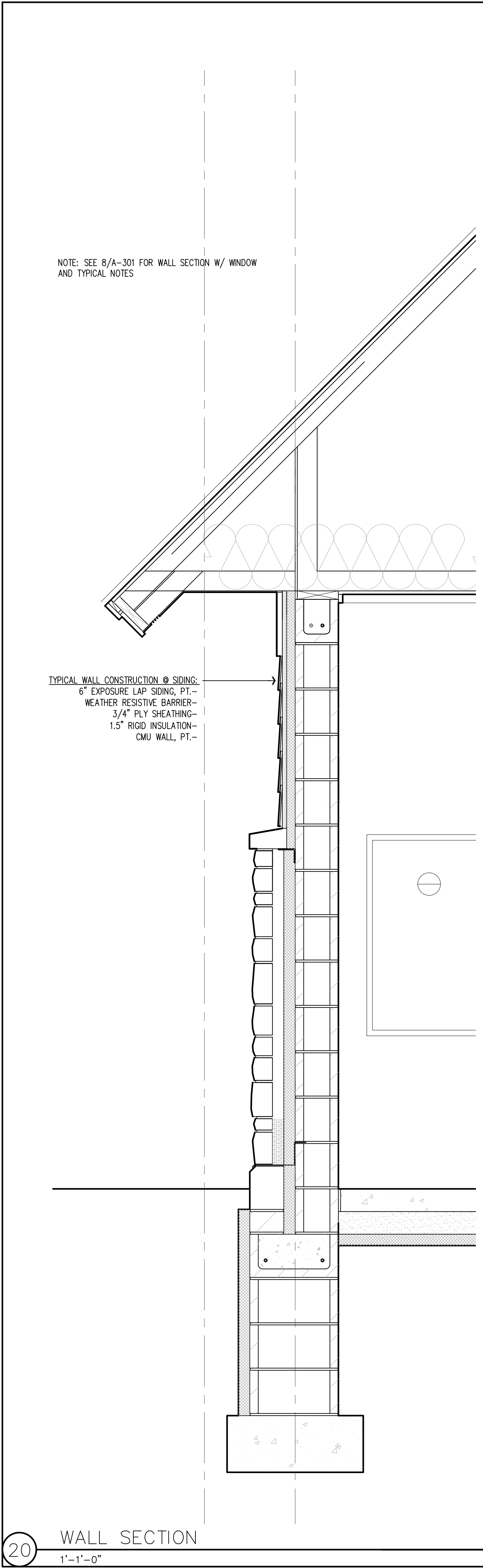
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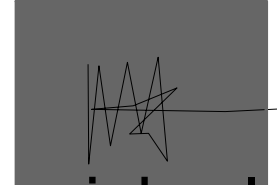
Sheet Number

A-302





St. Croix County
River Loop
Crossing
Restroom Bldg.
New Construction
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Houlton, WI 54082

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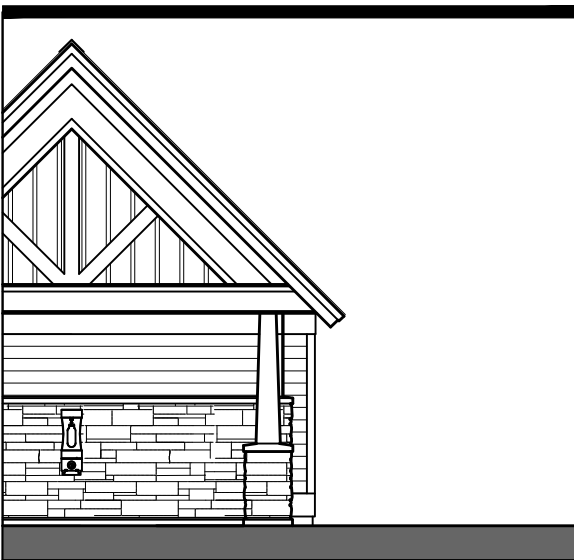
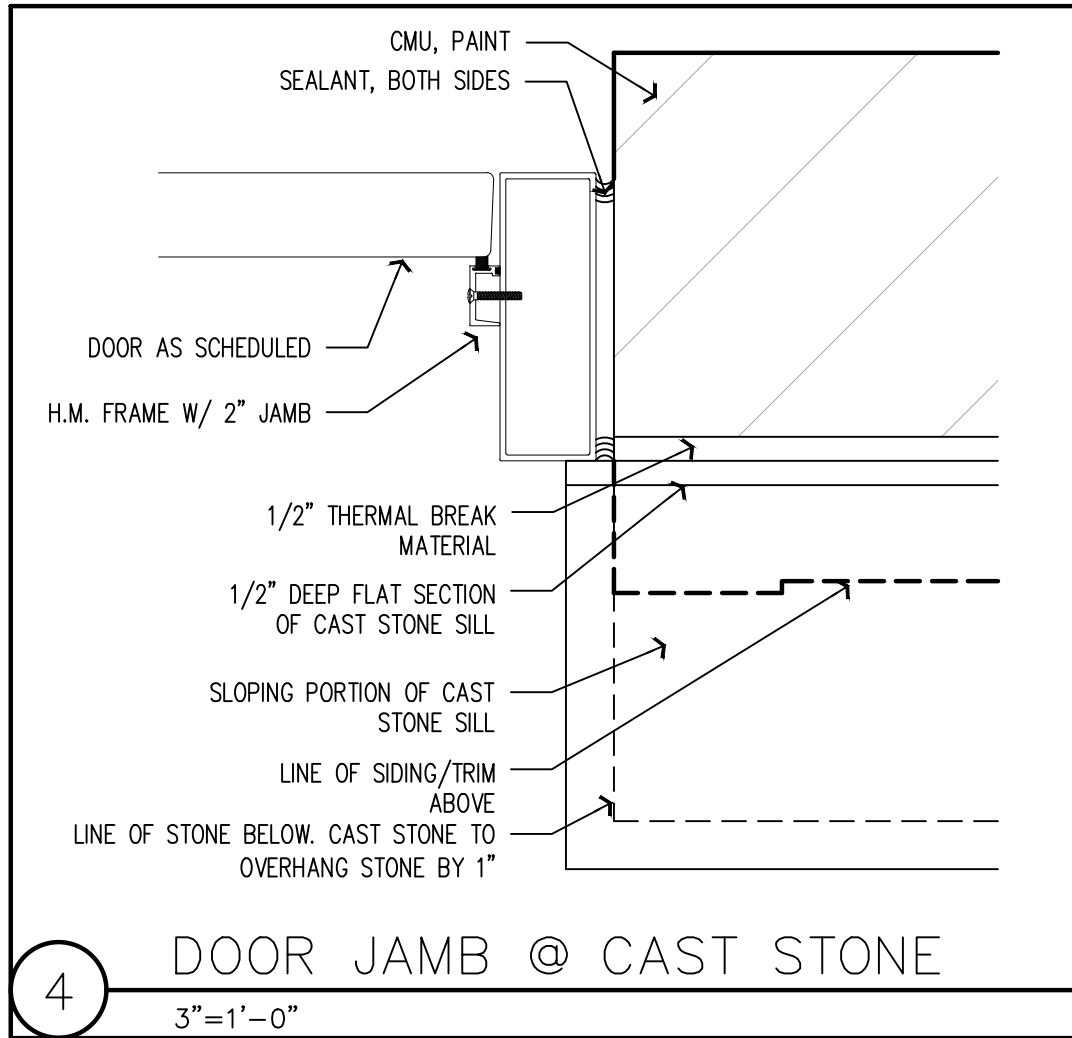
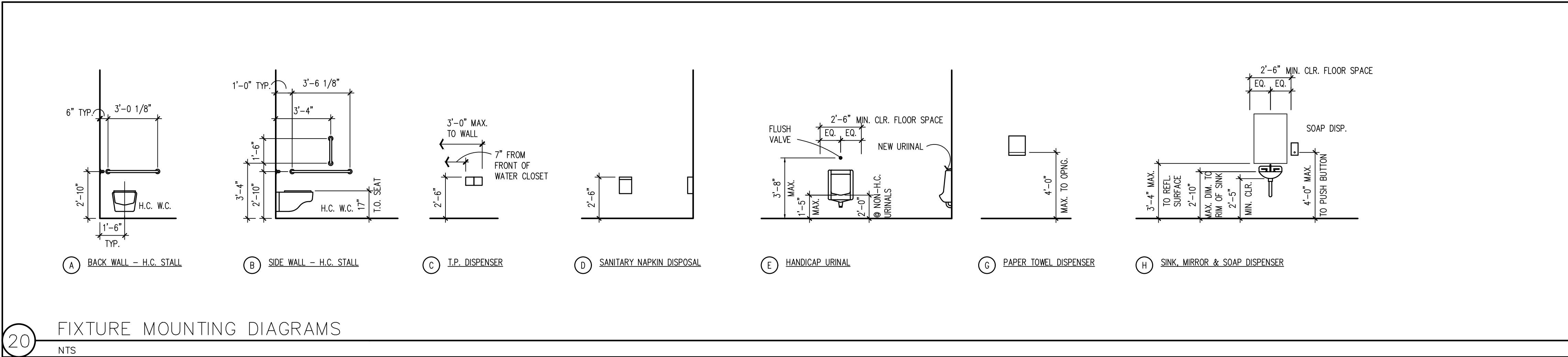
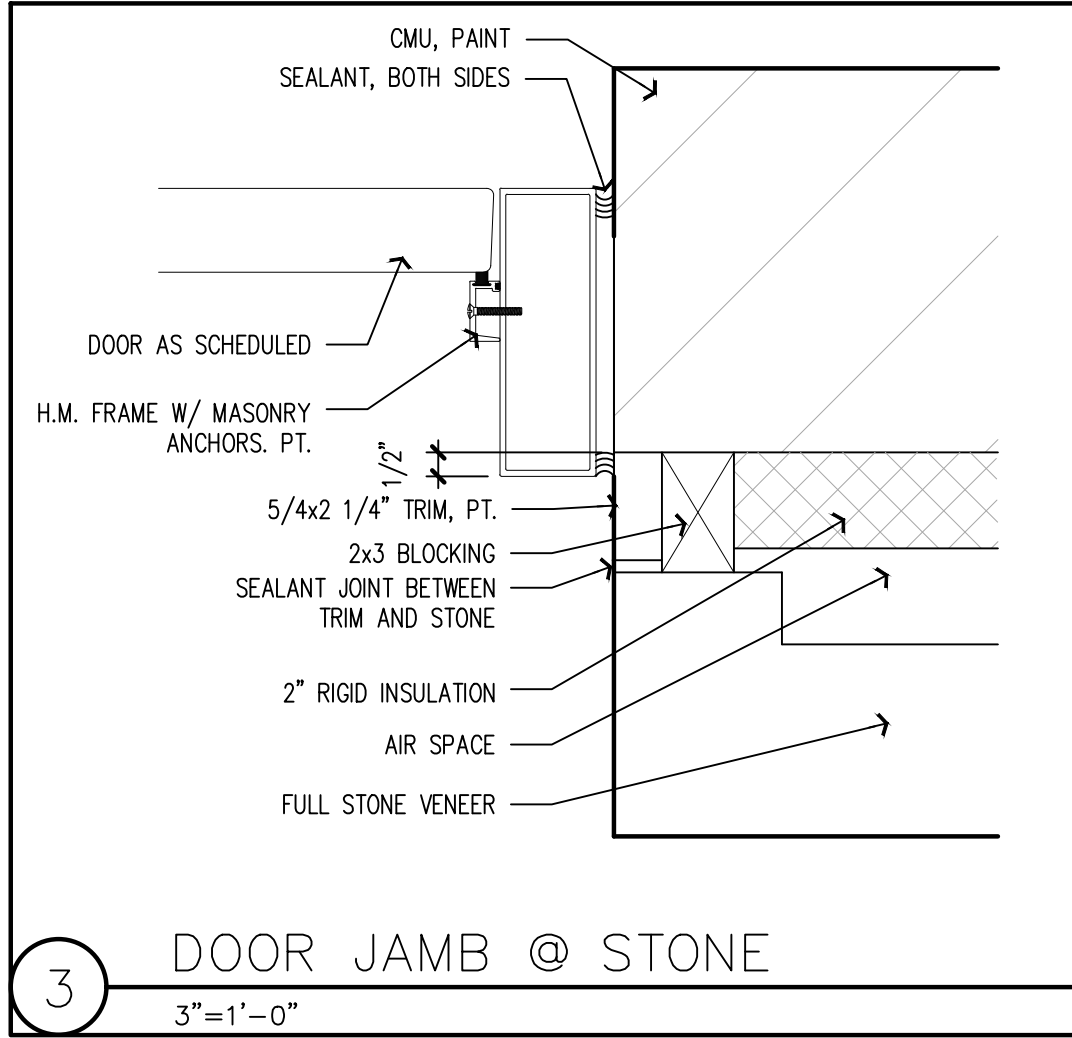
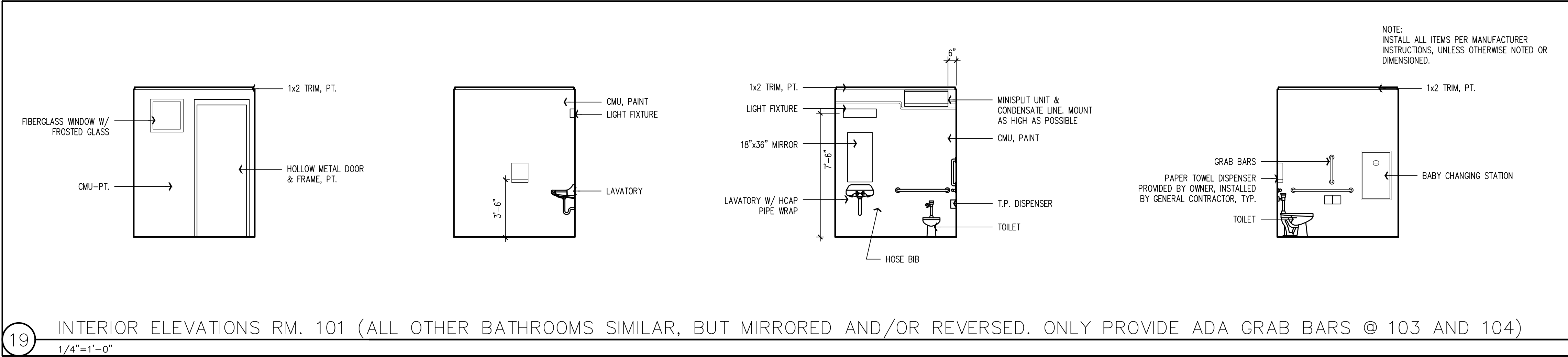
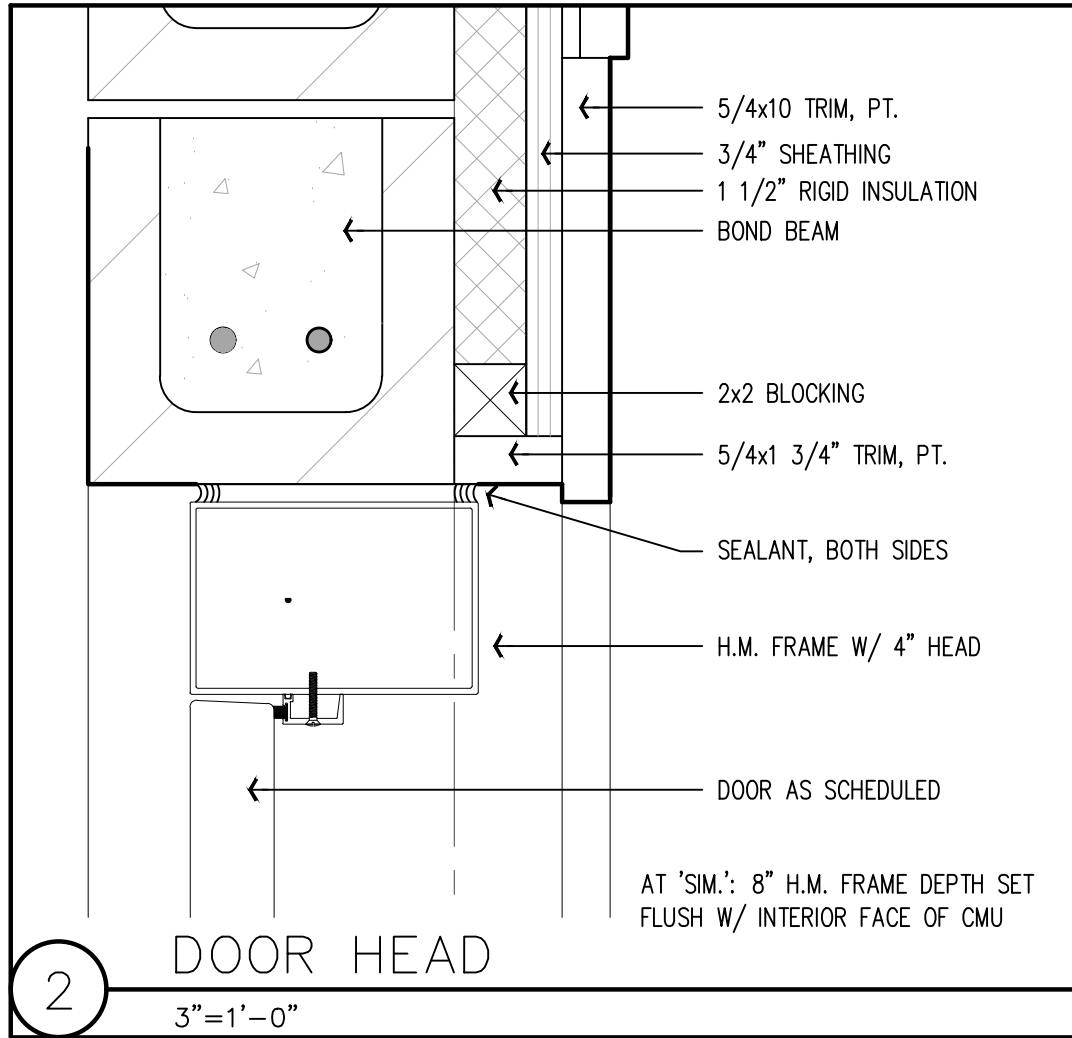
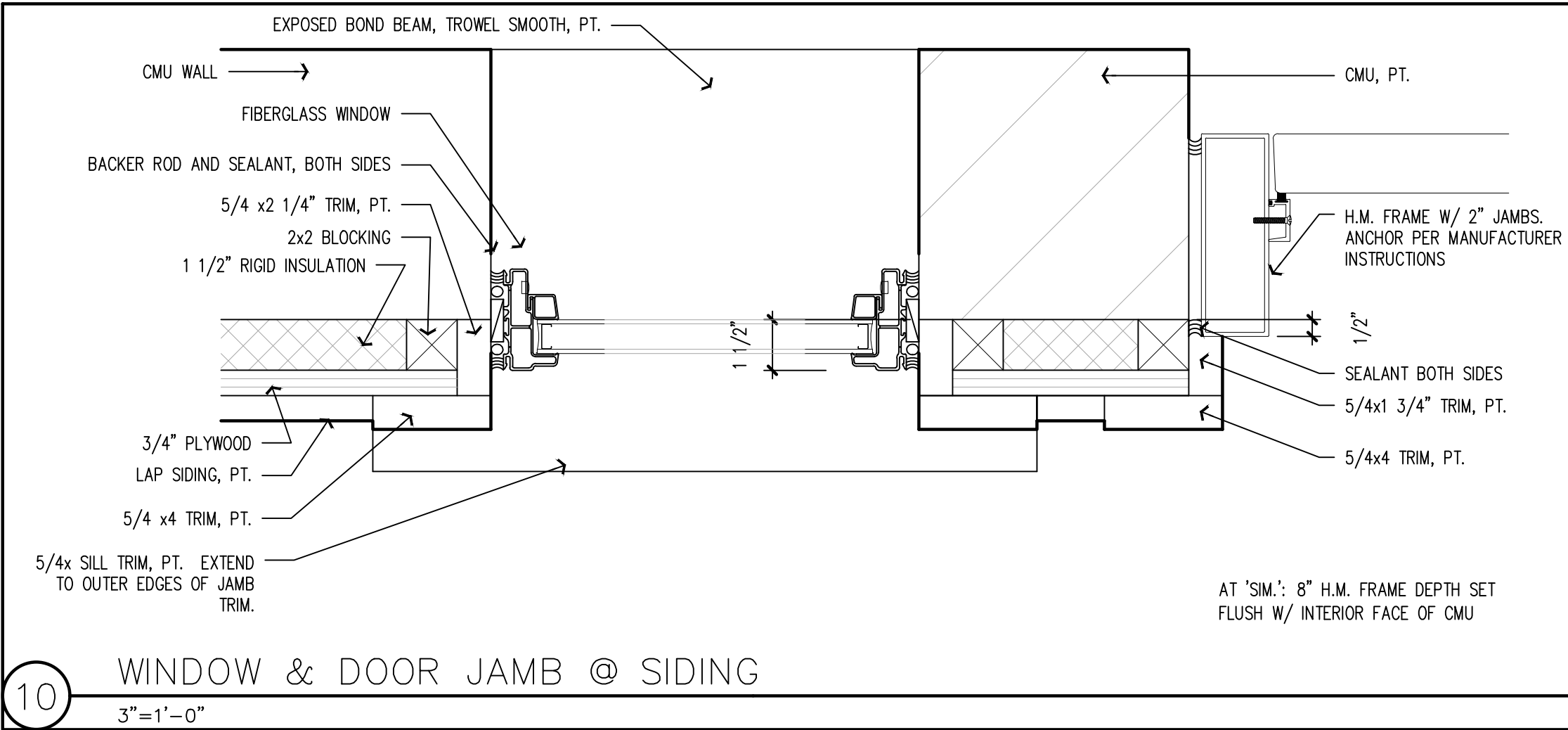
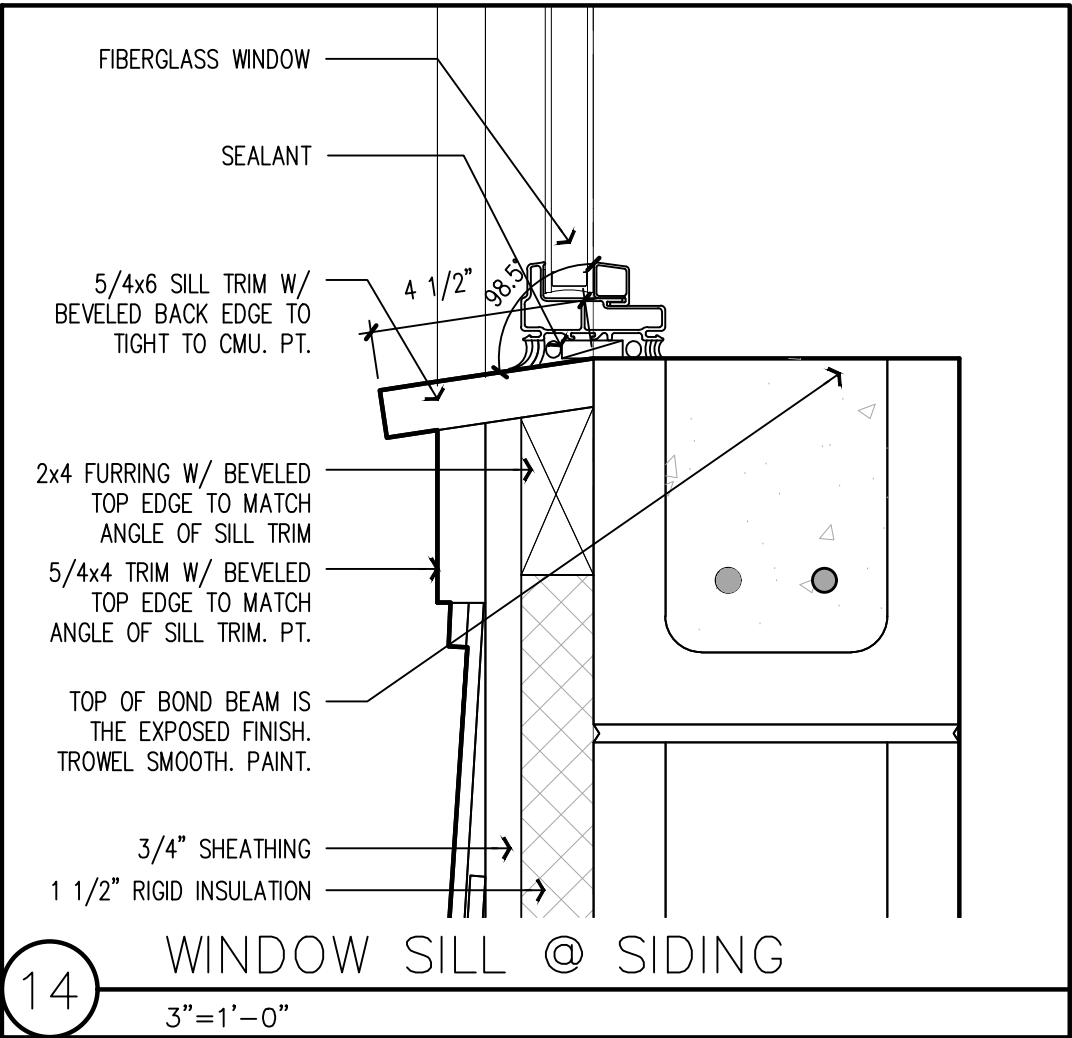
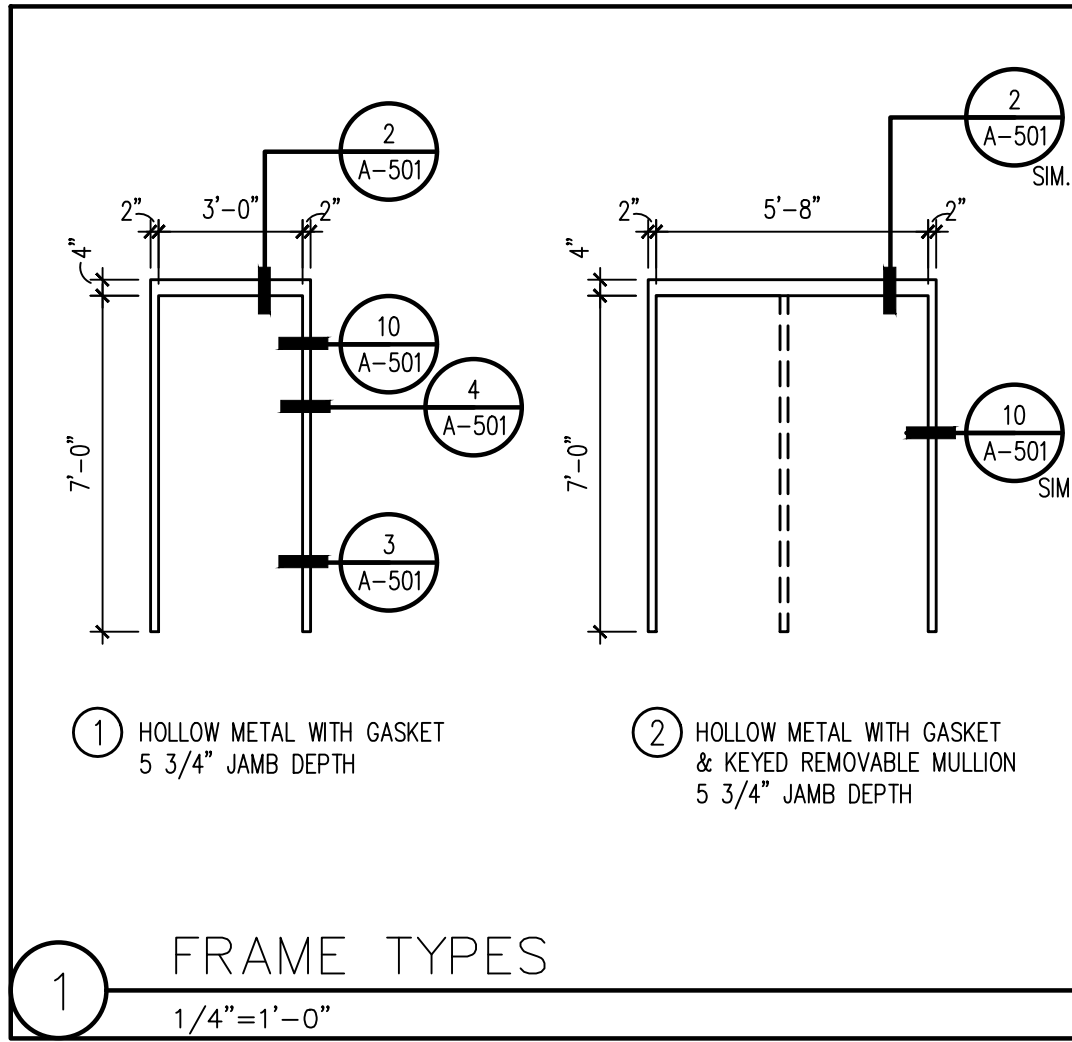
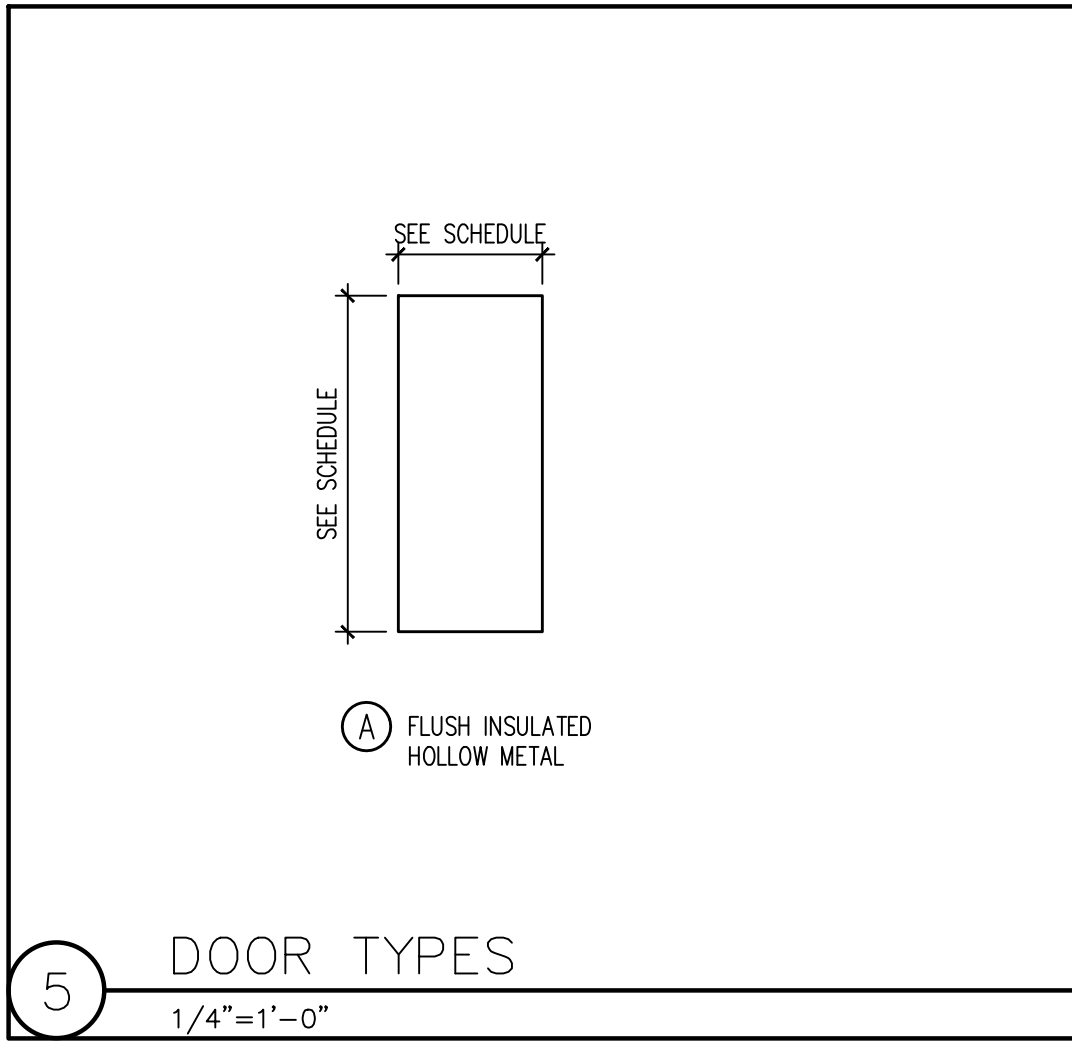
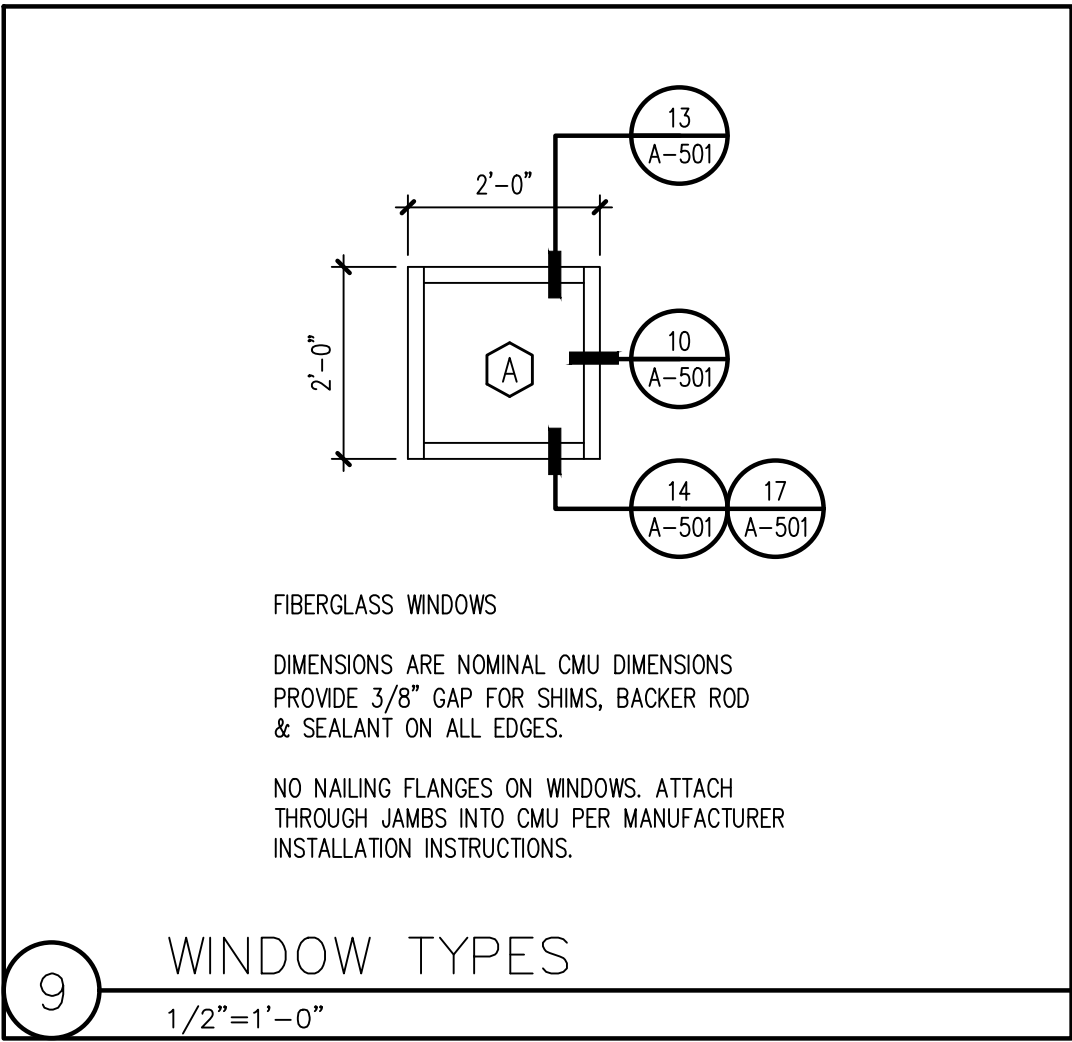
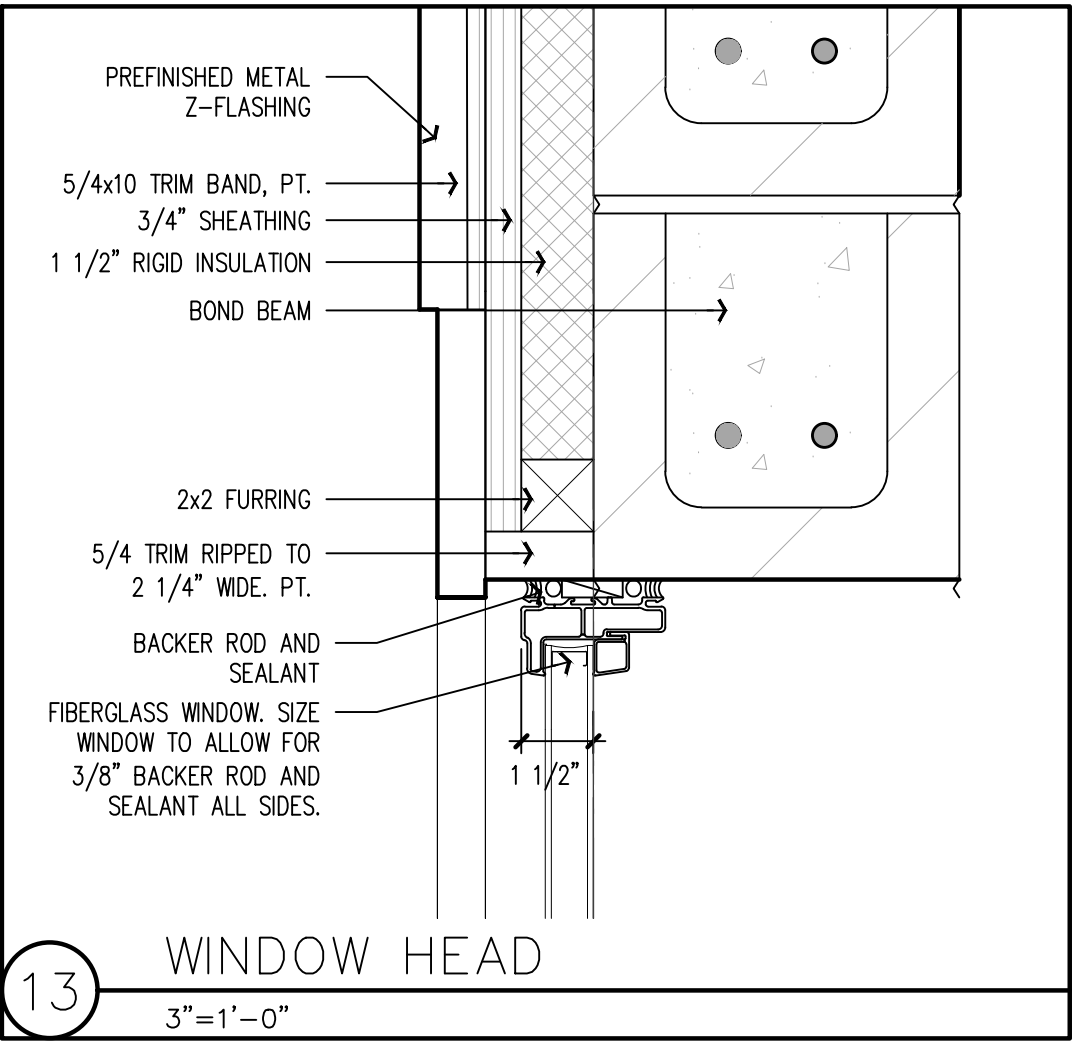
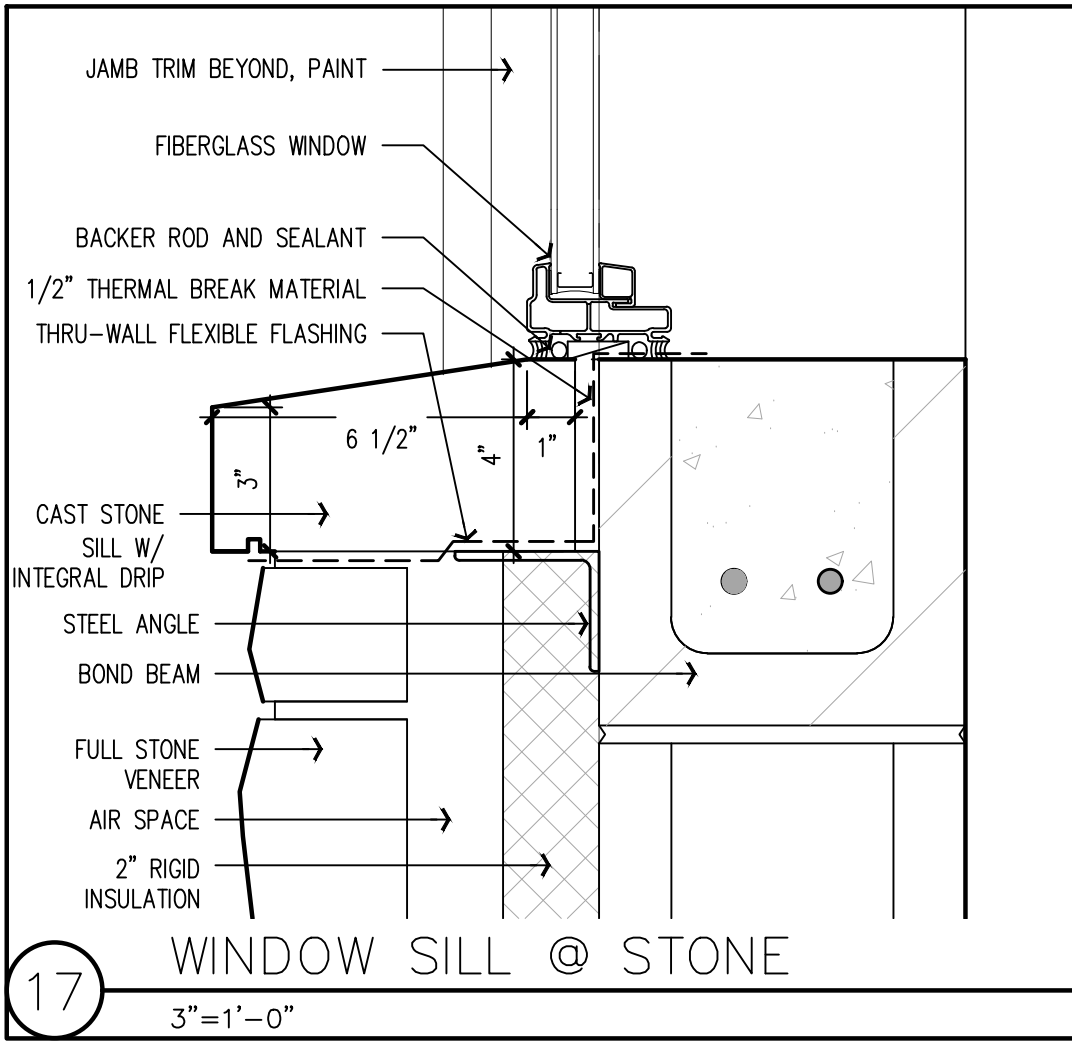
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Project No.: 17-01.0
Date: 1.26.18
Revisions:

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Title
SECTIONS 3

Sheet Number
A-303



St. Croix County
River Loop
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New Construction
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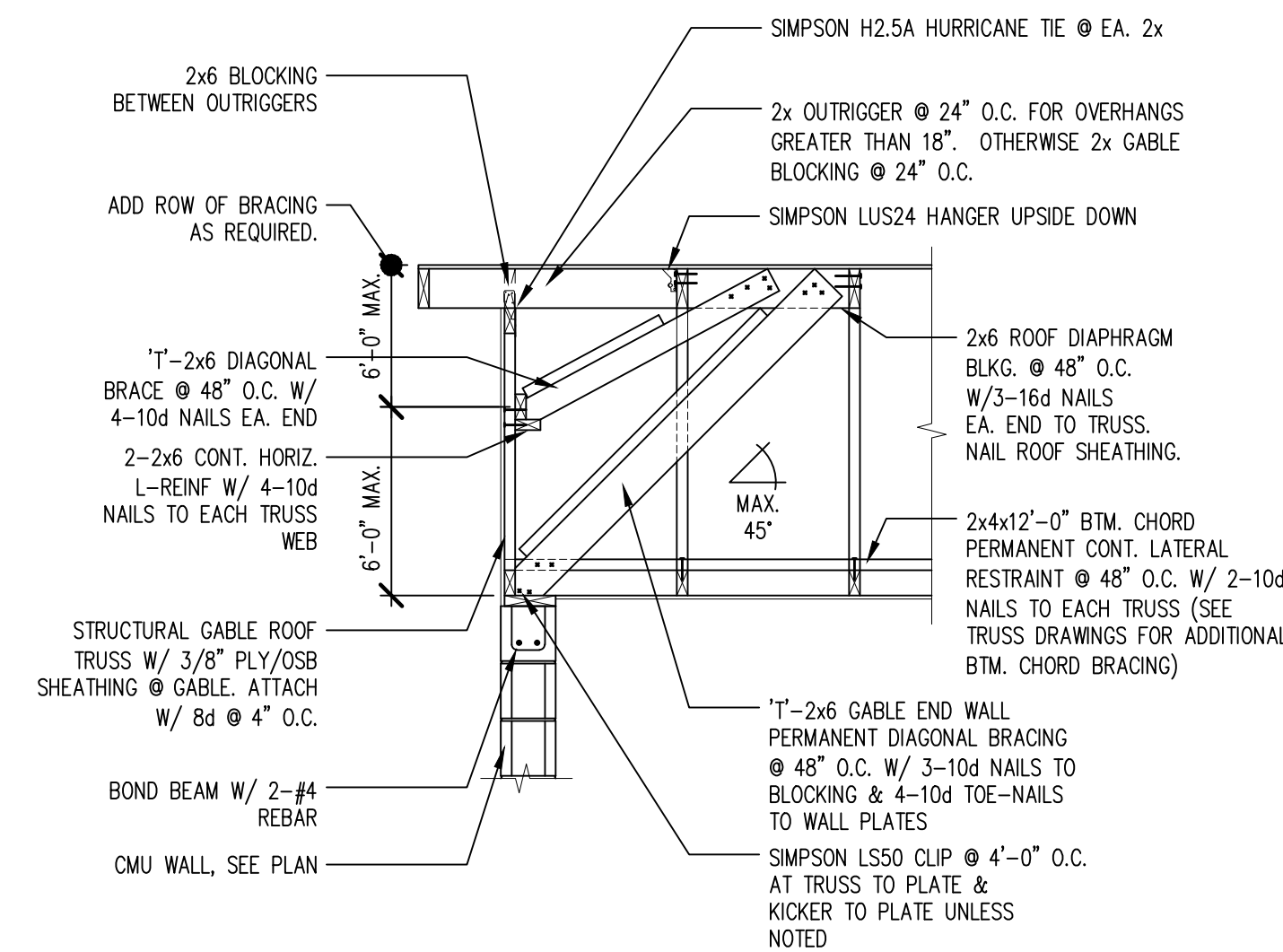
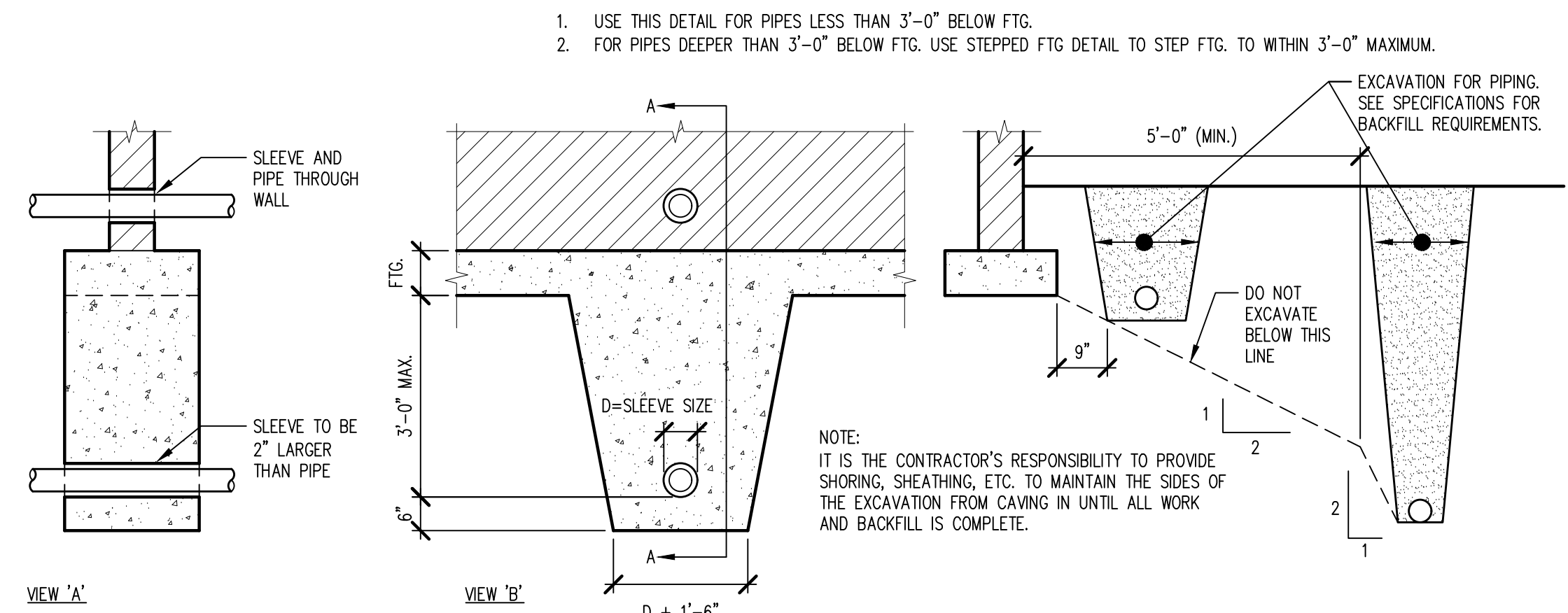
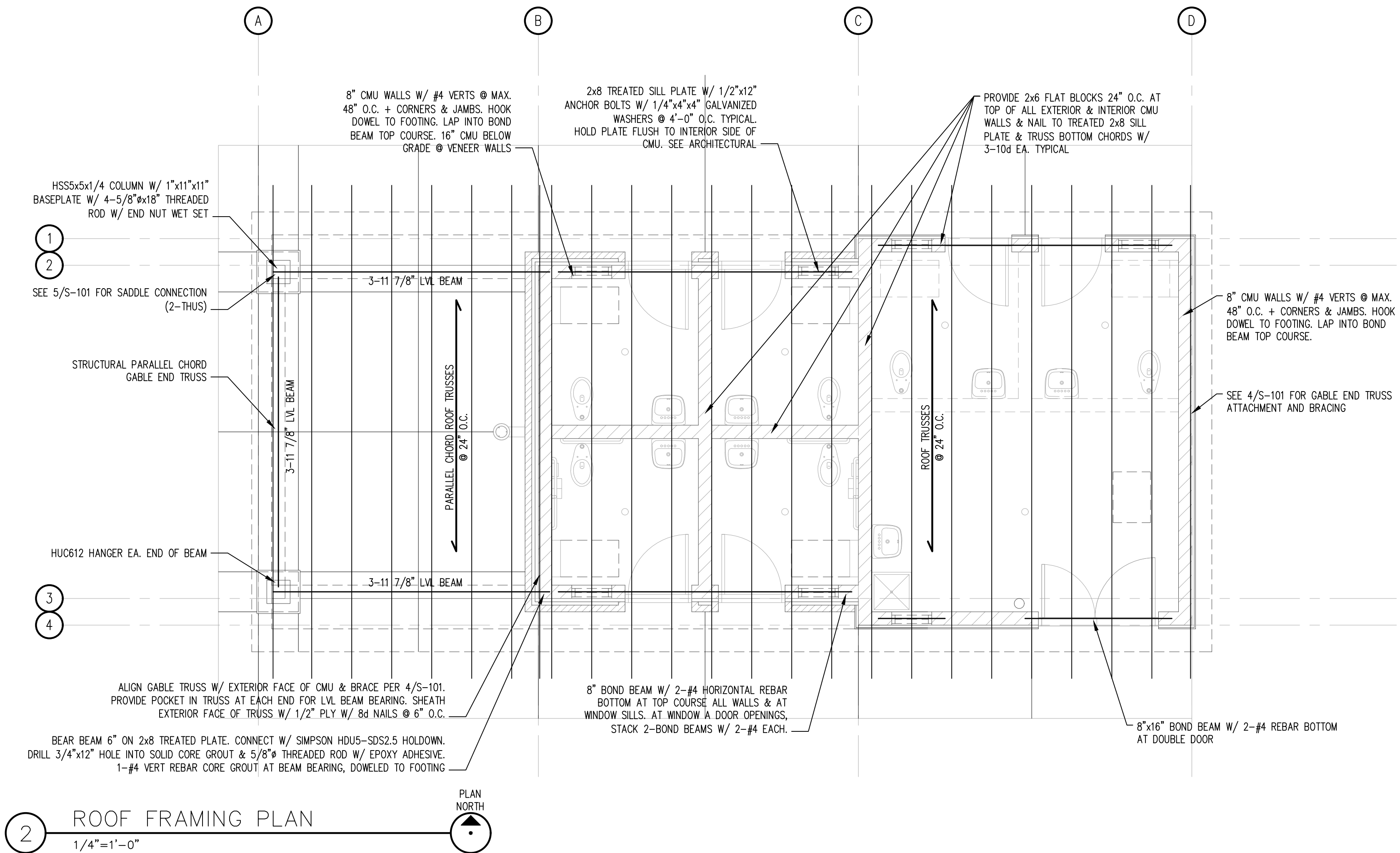
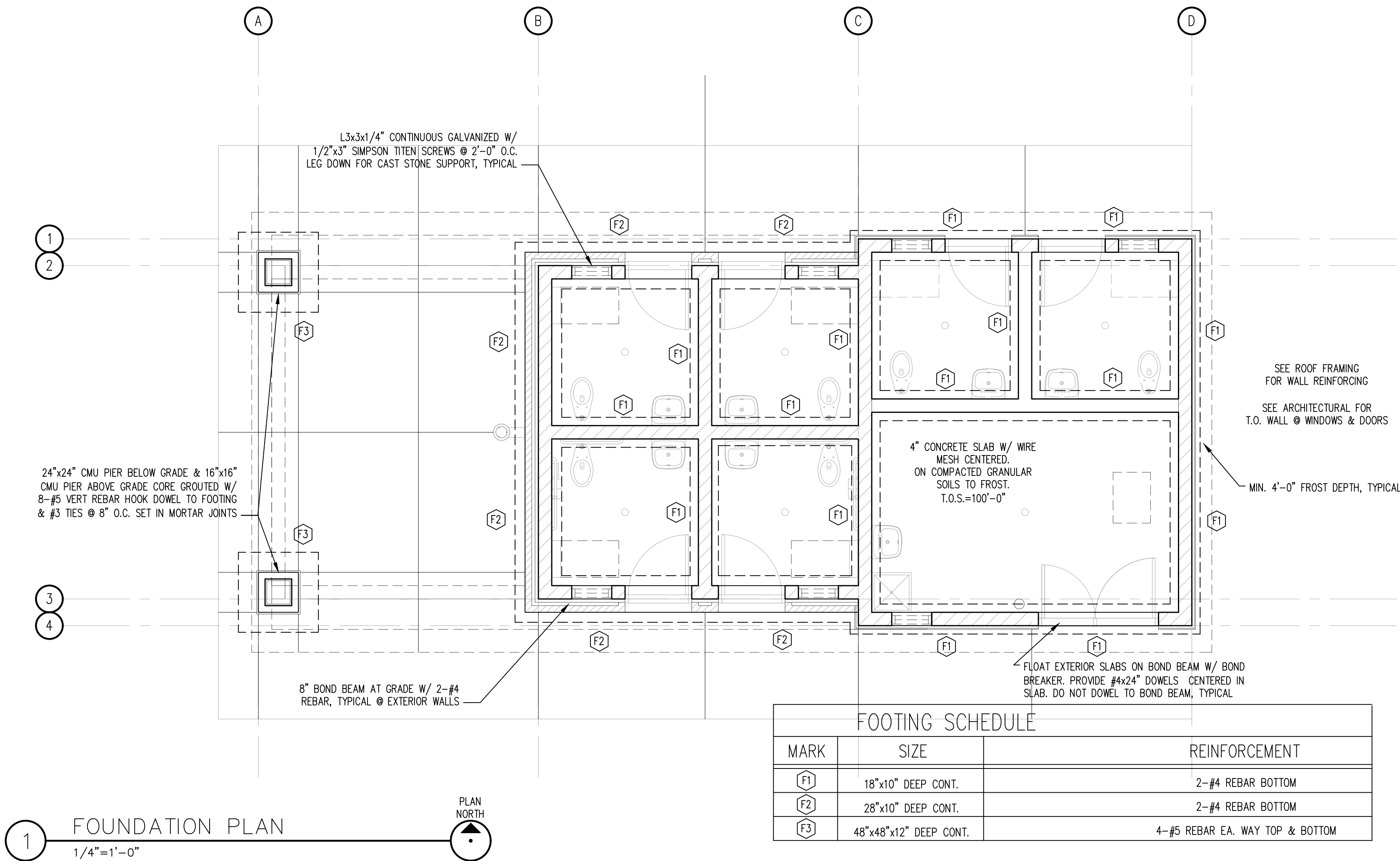
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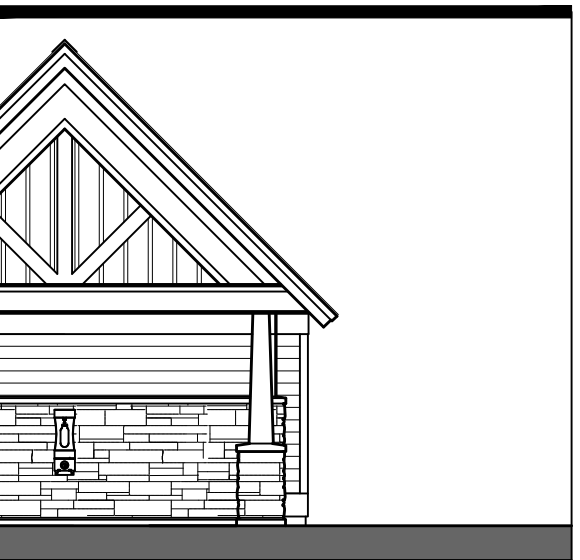
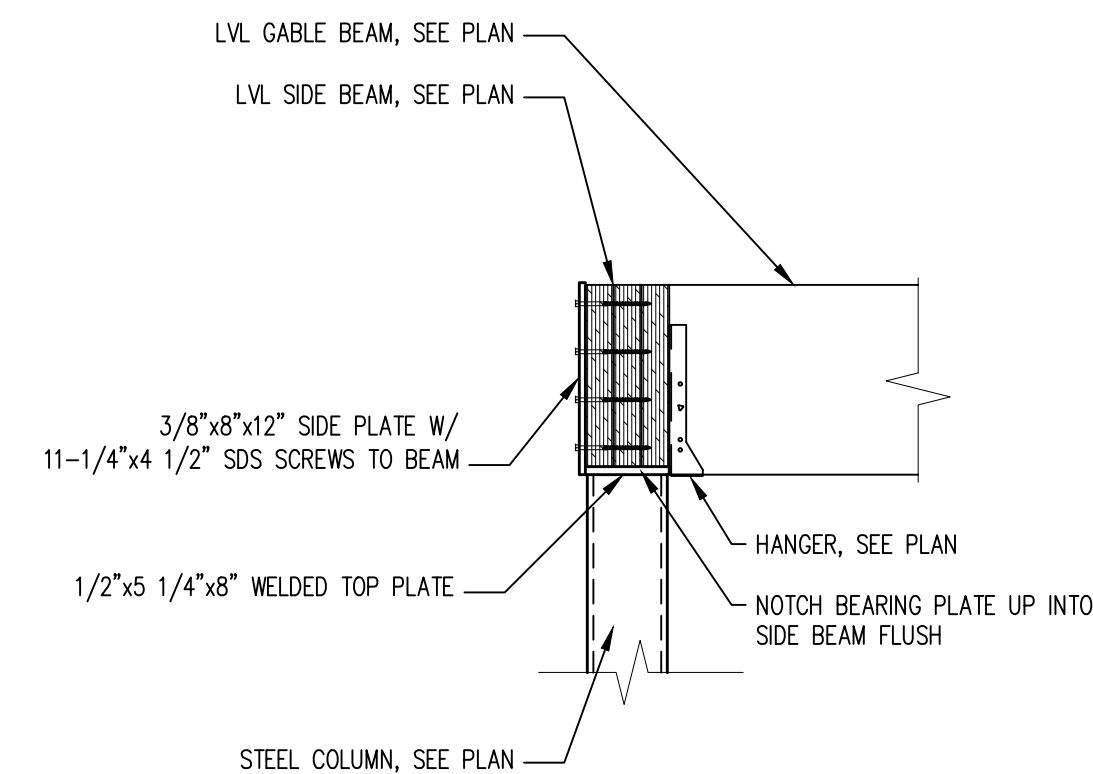
Project No.: 17-01.0
Date: 1.26.18
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WINDOW/DOOR TYPES
AND DETAILS. INTERIOR
ELEVATIONS
Sheet Number

A-501



- ALL NOTES TYPICAL UNLESS NOTED OTHERWISE:
- SEE ATTACHED STRUCTURAL NOTES FOR MORE INFORMATION.
 - ATTACH ALL TRUSS AND RAFTER ENDS WITH SIMPSON H4 TIES TO WALL PLATES & 2-10d TOE-NAILS.
 - USE 5/8" PLYWOOD ROOF SHEATHING, SEE STRUCTURAL NOTES FOR NAILING.
 - LOCATE ORDERS AS SHOWN. NOTIFY ENGINEER AND ARCHITECT OF PROPOSED TRUSS LAYOUT CHANGES.
 - EXTEND PLYWOOD WALL SHEATHING UP FACE OF TRUSS HEEL AND NAIL TO TRUSSES. STOP SHORT FOR VENTING AS REQUIRED.
 - MEND ALL FASCIA BOARD BUTT SPLICES WITH SIMPSON LSTA24 HORIZONTAL STRAP.
 - 2x8 TREATED SILL PLATE W/ 1/2"x12" GALVANIZED ANCHOR BOLTS W/ 1/4"x4"x4" GALVANIZED WASHERS @ 4'-0" O.C. @ EXTERIOR WALLS. 1/2"x8" GALVANIZED ANCHOR BOLTS W/ 1/4"x4"x4" GALVANIZED WASHERS ABOVE WINDOWS & DOORS. 1/2"x8" GALVANIZED ANCHOR BOLTS W/ 1/8"x2" GALVANIZED WASHERS @ 4'-0" O.C. @ INTERIOR WALLS.
 - ATTACH GABLE TRUSSES TO TREATED SILL PLATE W/ SIMPSON LSS02 CLIPS @ 24" O.C. SEE 4/S-101.
 - 8" & 12" CMU WITH #4 VERTICAL BARS, MAX. 48" O.C. + CORNERS + JAMBS. HOOK DOWEL TO FOOTING, LAP INTO BOND BEAM TOP COURSE. 16" CMU BELOW GRADE AT VENEER WALLS.
 - PROVIDE 8" BOND BEAM AT TOP COURSE AND AT GRADE FOR VENEER SUPPORT W/ 2-#4 CONTINUOUS REBAR BOTTOM.
 - PROVIDE 8" BOND BEAM AT WINDOW SILLS W/ 2-#4 HORIZONTAL, HOOK INTO JAMBS. WINDOW SILL BOND BEAMS TO BE EXPOSED. TROWEL SMOOTH IN PREPARATION FOR PAINT.
 - BRACE AND CONNECT GABLES AS SHOWN ON DETAIL 4/S-101.
 - PROVIDE SLEEVE/BOND BREAK MATERIAL AT ALL MECHANICAL/PLUMBING PIPING THAT EXTENDS THROUGH BOND BEAMS. REBAR TO RUN CONTINUOUS AROUND PIPING.
 - ATTACH 3/4" PLY SHEATHING OVER 1.5" RIGID INSULATION THRU INSULATION TO CMU W/ 1/4"x4" TAP-CONS @ 12" O.C. VERTICALLY AND 16" O.C. HORIZONTALLY.



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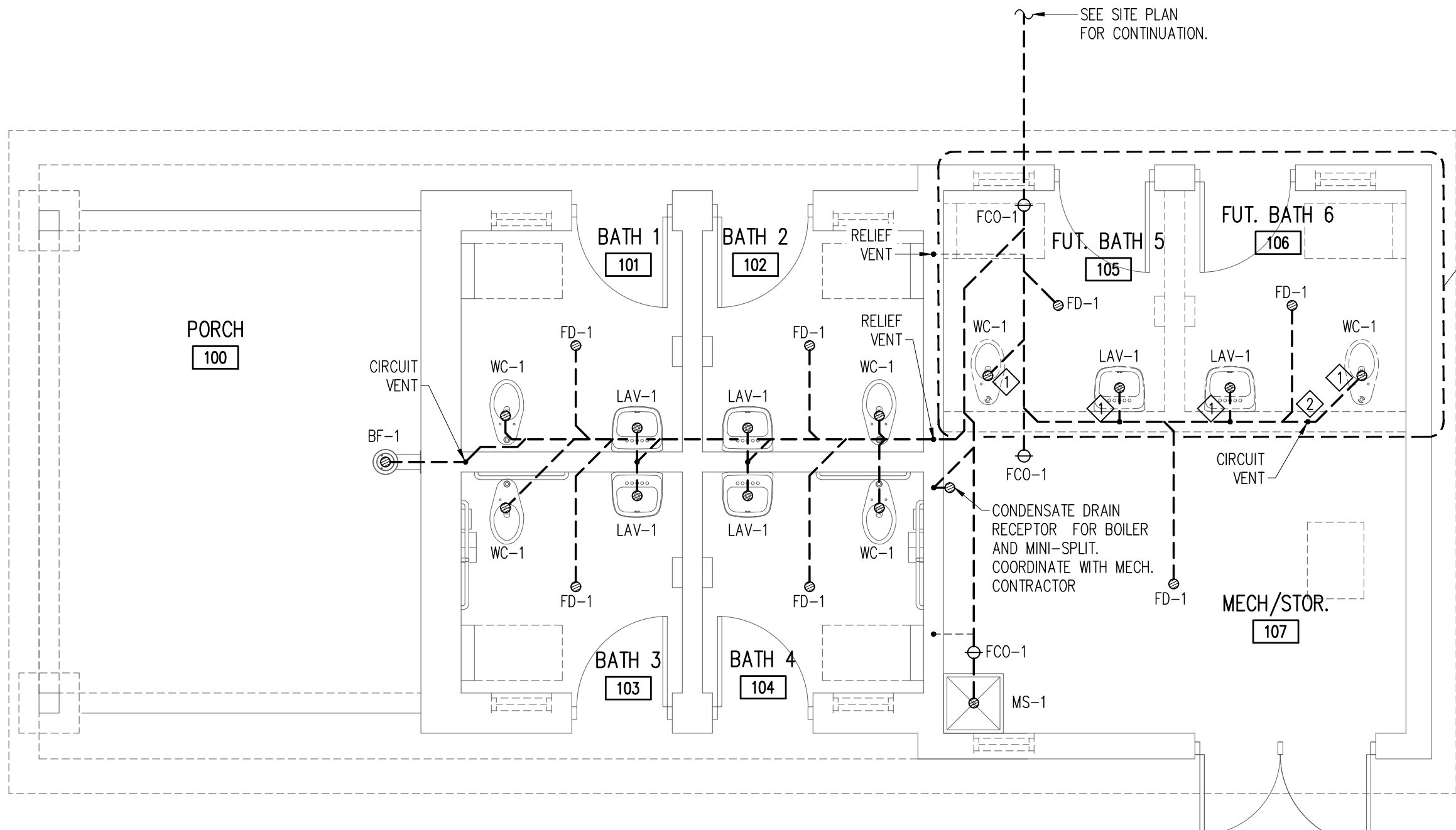
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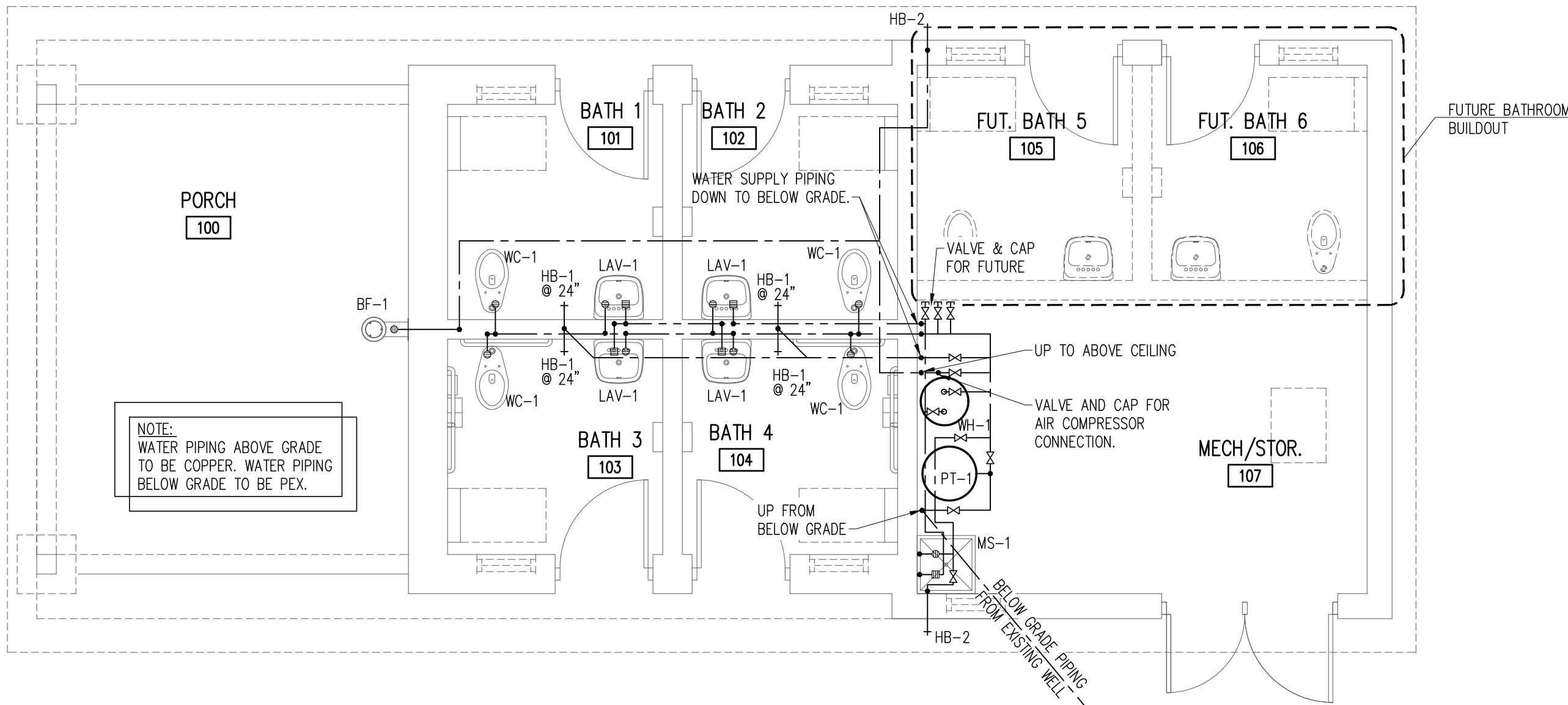
ROOF FRAMING PLAN & FOUNDATION PLAN

Sheet Number

S-101



1
P.1.1
SANITARY PLUMBING FLOOR PLAN
SCALE: 1/4" = 1'-0"



2
P.1.2
WATER SUPPLY FLOOR PLAN
SCALE: 1/4" = 1'-0"

CONSTRUCTION NOTES

- 1. STUB DRAIN PIPE ABOVE FINISHED FLOOR AND CAP FOR FUTURE FIXTURES.
- 2. STUB VENT PIPE ABOVE FINISHED FLOOR AND CAP FOR FUTURE BATHROOM ADDITION.

PLUMBING SYMBOL LEGEND

- FLOOR DRAIN
- WALL CLEAN OUT
- FLOOR CLEAN OUT
- COLD WATER CONNECTION POINT
- HOT WATER CONNECTION POINT
- SANITARY WASTE VENT
- SANITARY VENT THROUGH ROOF
- ROOF DRAIN
- HOSE BIB
- CONTROL VALVE
- CATCH BASIN
- METER
- TEE ELBOW DOWN
- VERTICAL RUN OF PIPE
- PIPE BREAK
- ELBOW DOWN
- CAP
- COLD WATER LINES
- HOT WATER LINES
- SANITARY SEWER LINES BELOW GRADE OR SLAB
- SANITARY VENT
- HOT WATER RECIRCULATION PIPING

PLUMBING FIXTURE SCHEDULE						
PLAN SYMBOL	DESCRIPTION	MANUFACTURER	CATALOG NO.	COLOR	FAUCET OR FLUSH VALVE	FIXTURE NOTES
WC-1	ADA COMPLIANT; WATER CLOSET, FLOOR MOUNT VITREOUS CHINA, 1.6 GPF, SIPHON JET FLUSHING, ELONGATED BOWL, 1 1/2" TOP SPUD, 17" BOWL HEIGHT	MANSFIELD	1319 ADRIATIC	WHITE	FV-1	1,2,5
SEAT	ELONGATED OPEN FRONT SEAT LESS COVER	CHURCH	295SSCT	WHITE	N/A	
LAV-1	ADA COMPLIANT; LAVATORY, WALL MOUNT VITREOUS CHINA WITH BACKSPASH, CONCEALED ARM CARRIER, OFFSET DRAIN, 21"x18" OVERALL DIMENSIONS, 16"x10" BASIN, 4" FAUCET CENTERS, AND 3/8" ANGLE SUPPLIES WITH STOP	MANSFIELD	2018HBNS GRAND ISLE	WHITE	F-1	1,2,3,5
MS-1	MOP SERVICE BASIN, ONE-PIECE MOLDED FIBERGLASS, 24"x24"x10" BASIN, REMOVABLE S.S. STRAINER, AND 2" DRAIN. ACCESSORIES TO INCLUDE: 3-HANDLE MOP HANGER, 31" HOSE WITH HOLDER, CORNER WALL GUARDS.	MUSTEE	63M	WHITE	F-2	1,2
HB-1	HOSE BIB, 3/4" MALE HOSE THREAD, 3/4" COPPER TUBE INLET, KEY OPERATED, STANDARD "O" SIZE WASHER VALVE SEAT, & WATTS BAC.	WOODFORD	MODEL 21	CHROME	N/A	1,4
HB-2	HOSE BIB FREEZELESS, INTEGRAL VACUUM BREAKER, 3/4" MALE HOSE THREAD, 3/4" COPPER INLET, KEY OPERATED AUTOMATIC DRAINING.	WOODFORD	MODEL 25	CHROME	N/A	1,4
BF-1	ADA COMPLIANT; WALL MOUNT BOTTLE FILLING STATION, SELF-CLOSING VANDAL-RESISTANT PUSHBUTTON, FILL AT 1 GPM, INLET STRAINER, HEAVY-DUTY CONSTRUCTION, 3/8" TUBING INLET	ELKAY	LK4405BF	BY OWNER	N/A	1
WH-1	WATER HEATER, 20 GALLON ELECTRIC, 4500 SINGLE HEATING ELEMENT, T&P RELIEF VALVE, BRASS DRAIN VALVE, S.S. CONSTRUCTION 240/1/60 VOLT, AND 5-YEAR WARRANTY	HTP	EVC020C1X045	N/A	N/A	T&P VALVE PIPED TO 6" A.F.F.
PT-1	SIZED, PROVIDED, AND INSTALLED BY WELL/PLUMBING CONTRACTOR					1
FLOOR DRAIN FD-1	GENERAL SERVICE FLOOR DRAIN, CAST IRON BODY AND ADJUSTABLE COLLAR WITH SEEPAGE SLOTS AND HEAVY DUTY GRATE	ZURN	MODEL ZN415HD	N/A	N/A	1

PLUMBING FAUCET & FLUSH VALVE SCHEDULE

FAUCET SYMBOL	DESCRIPTION	MANUFACTURER	CATALOG NO.	COLOR	FAUCET NOTES
FV-1	ADA COMPLIANT; WATER CLOSET FLUSH VALVE, BATTERY OPERATED SENSOR EXPOSED TYPE FLUSHOMETER, 1.6 GPF, 1 1/2" TOP SPUD, 1" I.P.S. SUPPLY, ADJUSTABLE TAILPIECE	SLOAN ROYAL	8111	CHROME	1,3
F-1	ADA COMPLIANT, SENSOR ACTIVATED BATTERY OPERATED FAUCET WITH INTEGRAL MIXER. 1.5 GPM, CONCEALED SUPPLIES, LOW BATTERY INDICATOR, SOUX CHIEF 660 MINIRESTORES	SLOAN	OPTIMA IQ EAF-150-ISM-IC	CHROME	1,2
F-2	SURFACE MOUNT MOP SINK FAUCET, 8" CENTERS, SURFACE MOUNT SUPPLIES, INTEGRAL VACUUM BREAKER SPOUT, INTEGRAL STOPS, PAIL HOOK WITH WALL SUPPORT, WATTS BAC 3/4" HOSE CONNECTION VACUUM BREAKER	MUSTEE	63.600A	CHROME	1

FIXTURE & FAUCET SCHEDULE NOTES

- PROVIDE ALL NECESSARY MOUNTING ACCESSORIES, TRIM, AND HARDWARE REQUIRED FOR A COMPLETE AND OPERABLE INSTALLATION INCLUDING: CHROME PLATED BRASS BODIED STOPS, CHROME PLATED COPPER TUBE RISERS, CHROME ESCUTCHEONS, POLISHED CHROME CAST BRASS P-TRAP WITH CLEANOUT AND APPLICABLE MATCHING STRAINERS & DRAIN ASSEMBLIES.
- APPLY MATCHING SEALANT AT ALL INTERSECTIONS OF FIXTURE BODY AND WALL/FLOOR SURFACES.
- FIXTURE AND COMPLETE INSTALLATION SHALL COMPLY WITH I.B.C. CHAPTER 11 (ADA) REQUIREMENTS.
- LAVATORIES: PROVIDE OFFSET TAILPIECE WITH WHEELCHAIR STRAINER ASSEMBLY, WRAP DRAIN ASSEMBLY, ANGLE STOPS, AND SUPPLY TUBES WITH NON-YELLOWING, FIRE RETARDANT VINYL COVERS WITH SNAP CLIP, FLUSH MOUNTED REUSABLE FASTENERS. ANGLE STOP VALVES SHALL BE SECURED WITH LOCKING LID ACCESS COVERS AND P-TRAP SHALL INCLUDE CLEANOUT CAP TO ALLOW SERVICE WITHOUT DISASSEMBLY.
- PROVIDE CONCEALED ARM CARRIER TO SUPPORT WALL HUNG FIXTURE INDEPENDENT OF WALL. VERIFY WALL THICKNESS AND CONSTRUCTION TYPE.
- FIXTURE COLOR FOR BASE BID SHALL BE WHITE UNLESS NOTED DIFFERENTLY IN SCHEDULES. FIELD VERIFY FINAL COLOR SELECTION WITH OWNER/ARCHITECT PRIOR TO FIXTURE ORDER. ANY VARIATION FROM THE BASE COLOR SHALL BE CONSIDERED AS AN ADD ALTERNATE.

GENERAL PLUMBING NOTES

- ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH STATE AND LOCAL PLUMBING CODES
- PLUMBING CONTRACTOR SHALL COORDINATE WITH ALL OTHER TRADES BEFORE BEGINNING ANY INSTALLATION AND CONTINUING THROUGH OUT THE PROJECT.
- ALL WASTE, VENT AND STORM SEWER PIPING SHALL BE SCHEDULE 40 PVC PIPE (UNLESS NOTED OTHERWISE)
- ALL ABOVE GRADE WATER SUPPLY PIPING SHALL BE TYPE "L" COPPER OR CROSS LINKED POLYETHYLENE (PEX) TUBING.
- ALL BELOW GRADE WATER PIPING SHALL BE TYPE "K" COPPER, PROTECT WITH 1/2" FOAM PIPE INSULATION WHEN PENETRATING CONCRETE SLABS OR WALLS.
- OTHER STATE APPROVED DOMESTIC WATER PIPING WILL BE ACCEPTED WITH PRIOR APPROVAL.
- MINIMUM PITCH ON ALL HORIZONTAL SANITARY WASTE DRAIN LINES ARE AS FOLLOWS UNLESS NOTED OTHERWISE ON PLANS
 - LESS THAN 3" IN DIAMETER - MINIMUM OF 1/4" PER FOOT.
 - 3" TO 6" DIAMETER - MINIMUM OF 1/8" PER FOOT.
 - 8" AND OVER IN DIAMETER - MINIMUM OF 1/16" PER FOOT.
- PLUMBING PIPING INSULATION:
 - DOMESTIC COLD, HOT AND RECIRCULATED HOT WATER PIPING SHALL HAVE A MINIMUM FLAME SPREAD RATING OF 25 AND A SMOKE DEVELOPED RATING OF 50. ALL JOINTS & SEAMS SHALL BE SEALED. INSULATE WITH THE FOLLOWING:
 - FLEXIBLE ELASTOMERIC THERMAL INSULATION. 1/2" THICK CLOSED CELL POLYOLEFIN FOAM TYPE PIPE INSULATION.
 - 1" GLASS FIBER TYPE INSULATION W/ KRAFT JACKET.
- PROVIDE AND INSTALL SUITABLE HANGERS AND SUPPORTS FOR ALL PIPING, WASTE, VENT, WATER, GAS ETC. IN ACCORDANCE WITH APPLICABLE CODES.
- PROVIDE ESCUTCHEONS TO FINISH OFF OPENINGS WHEN EVER EXPOSED PIPES PASS THROUGH FLOORS, WALLS, OR CEILINGS.
- PROVIDE NECESSARY EXPANSION LOOPS OR FITTINGS TO LIMIT PIPE EXPANSION/CONTRACTION BASED ON SPECIFIC MATERIAL RECOMMENDATIONS, TEMPERATURE, AND LENGTH OF PIPING RUN.
- PROVIDE DIELECTRIC PIPE FITTINGS WHEREVER DISSIMILAR PIPE MATERIALS ARE CONNECTED.
- ANY PLUMBING PENETRATIONS THROUGH FIRE RATED ASSEMBLIES OR MEMBRANES SHALL BE U.L. LISTED AND INSTALLED IN SUCH A MANNER, TO MAINTAIN THE FIRE RATING OF THE ASSEMBLY OR MEMBRANE.
- THE WATER PIPING SYSTEM SHALL BE DISINFECTED IN ACCORDANCE WITH THE WISCONSIN PLUMBING CODE.
- MATERIALS USED FOR THE PLUMBING SYSTEMS SHALL COMPLY WITH THE STANDARDS SET WITH THE WISCONSIN PLUMBING CODE.

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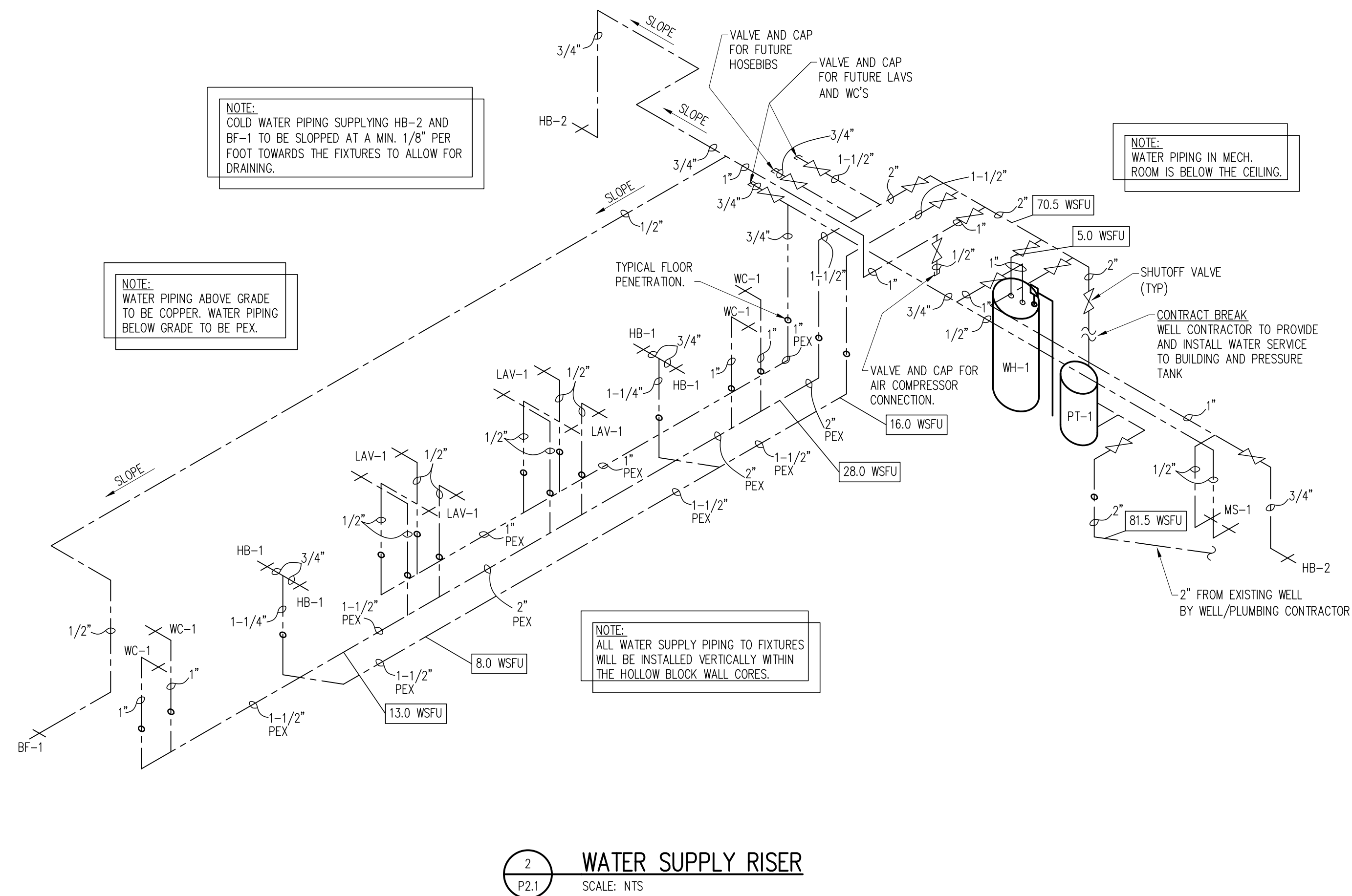
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PROJECT:
NEW BATHROOM FACILITY
ST. CROIX COUNTY RIVER LOOP CROSSING
HOULTON, WISCONSIN

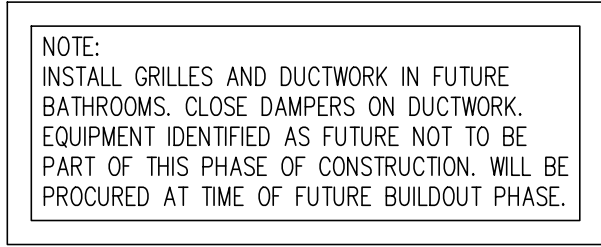
PLUMBING FLOOR PLAN

SHEET NO.
P1.1

DRAWING PHASE:	DRAWN BY:	KTG
OWNER REVIEW	CHECKED BY:	DWA
AGENCY REVIEW	DATE:	08/07/17
BID DOCUMENT	DWG FILE:	
FOR CONSTRUCTION	REF FILE:	5276-003
AS-BUILT DOCUMENT	JOB NUMBER:	5276-003
	OWNERS FINAL REVIEW SET	
	BID SET	
	DWA	1-26-18
	DWA	9-1-17
	NAME:	DATE:



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NEW BATHROOM FACILITY ST. CROIX COUNTY RIVER LOOP CROSSING HOULTON, WISCONSIN		PLUMBING RISERS				OWNER REVIEW		CHECKED BY: DWA			
						AGENCY REVIEW		DATE: 08/07/17			
				X		BID DOCUMENT		DWG FILE:		BID SET	
						FOR CONSTRUCTION		REF FILE: 5278-003			
						AS-BUILT DOCUMENT		JOB NUMBER: 5278-003		OWNERS FINAL REVIEW SET	
										REVISION DESCRIPTION:	
										NAME:	
										DATE:	
SHEET NO. P2.1		Auth•Consulting/associates									

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PROJECT:	NEW BATHROOM FACILITY ST. CROIX COUNTY RIVER LOOP CROSSING HOULTON, WISCONSIN
SHEET NO.	M1.1
HVAC FLOOR PLAN	

NOTES:

1. EQUIPMENT OF EQUAL QUALITY AND PERFORMANCE MAY BE SUBMITTED WITH PRIOR APPROVAL.
2. PROVIDE WITH MITSUBISHI MHK1 T-STAT CONTROLLER. MOUNT IN MECH. ROOM AND USE TEMP SENSOR ON INDOOR UNIT HEAD FOR REMOTE CONTROL OPERATION
3. PROVIDE WITH DRAIN PAN HEATER AND WIND BAFFLE.

NOTES:

1. EQUIPMENT OF EQUAL QUALITY AND PERFORMANCE MAY BE SUBMITTED WITH PRIOR APPROVAL.
2. INTERLOCK WITH SPACE LIGHTING
3. TO BE INSTALLED IN FUTURE BUILDOUT.

NOTES:-

1. EQUIPMENT OF EQUAL QUALITY AND PERFORMANCE MAY BE SUBMITTED WITH PRIOR APPROVAL
2. COORDINATE COLOR SELECTION WITH OWNER

NOTES:

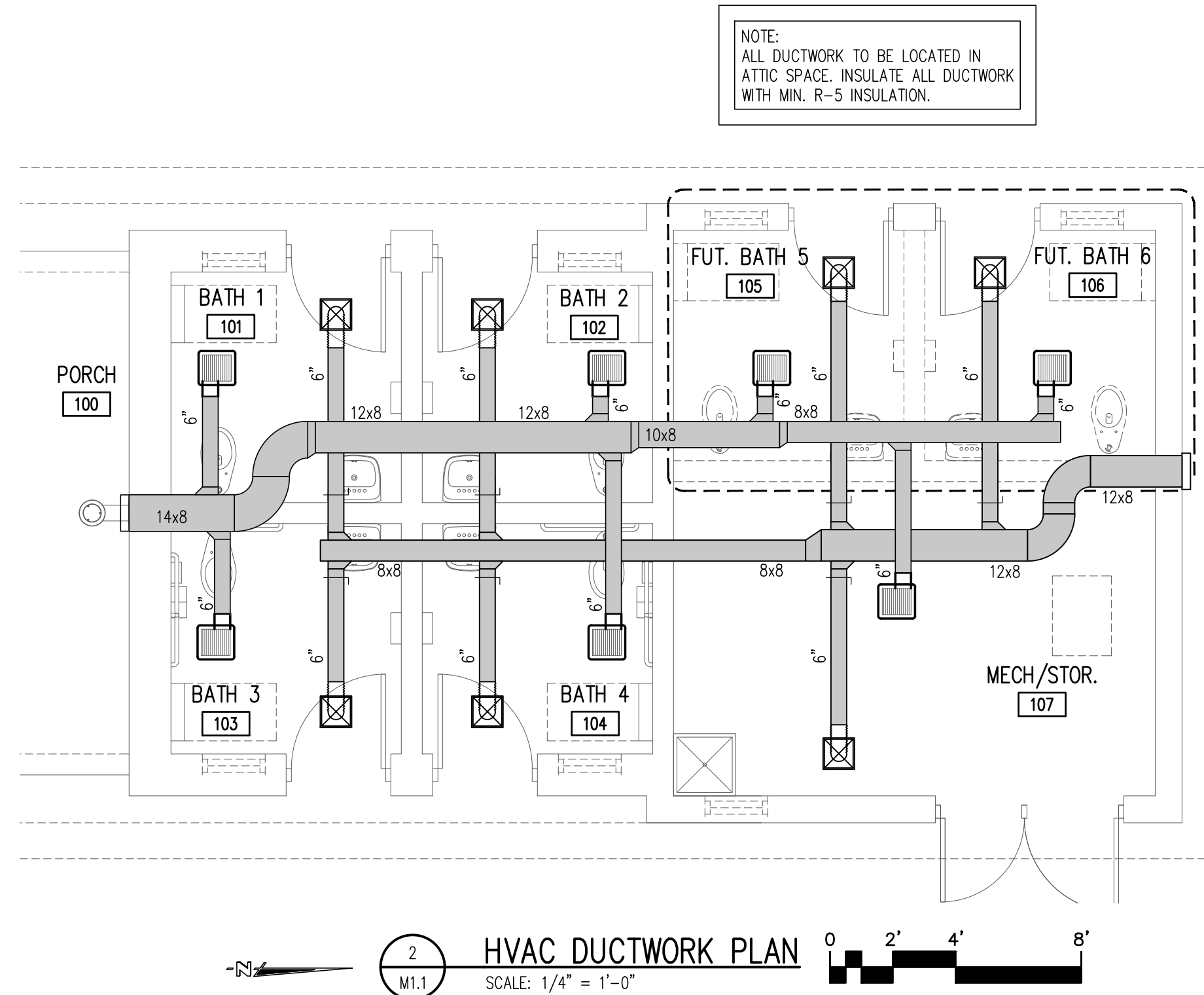
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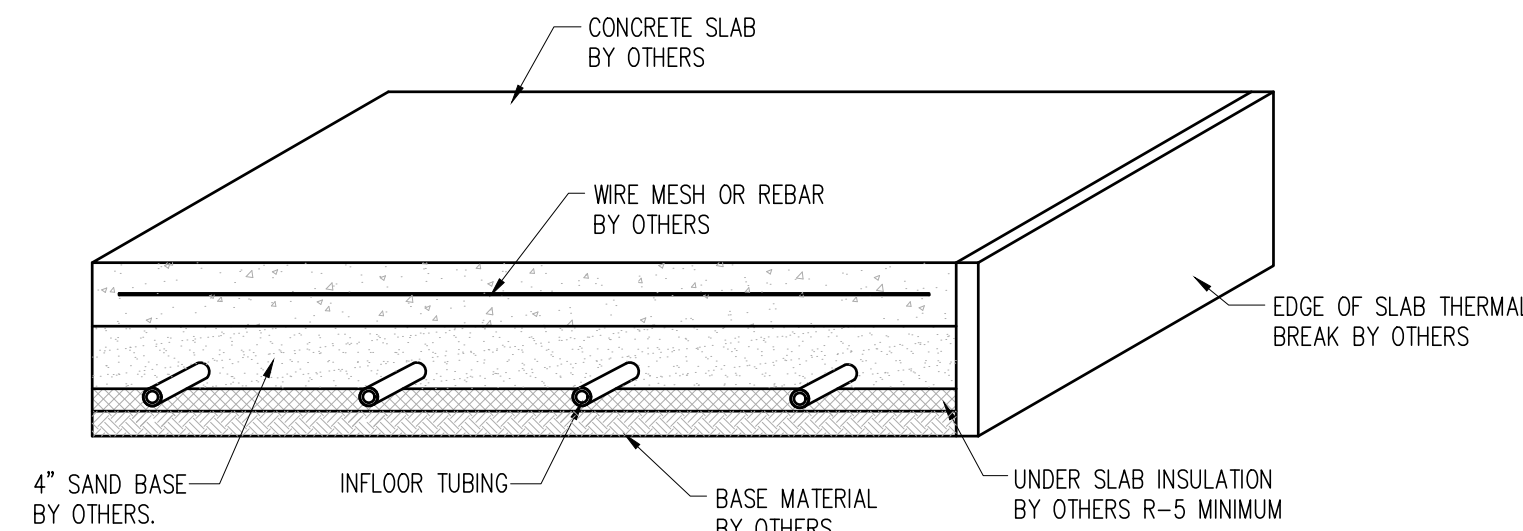
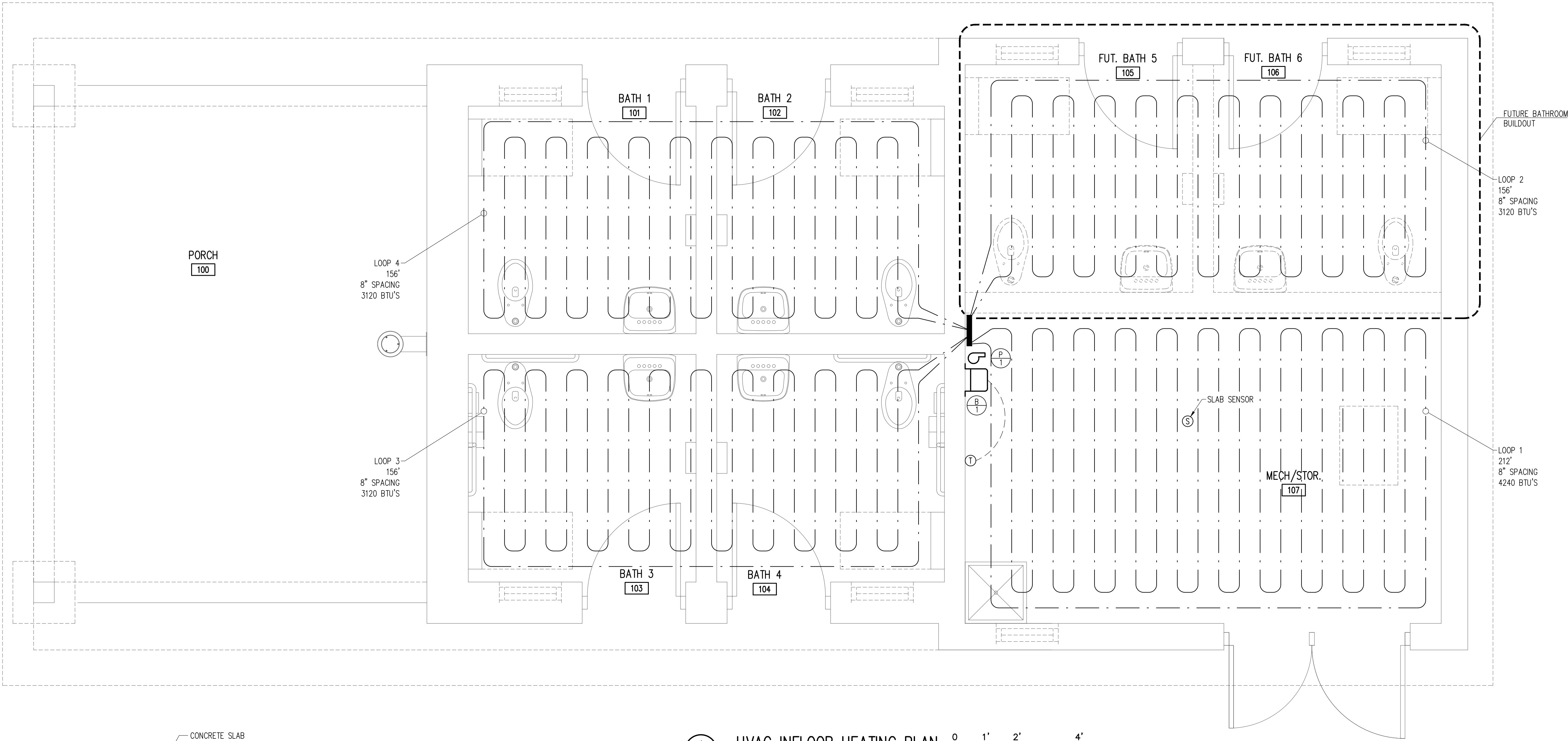
NOTES:

1. EQUIPMENT OF EQUAL QUALITY AND PERFORMANCE MAY BE SUBSTITUTED WITH PRIOR APPROVAL.
2. UNIT SHALL HAVE WALL MOUNTED THERMOSTAT
3. PROVIDE CEILING MOUNTING KIT
4. UNIT TO HAVE INTEGRAL THERMOSTAT
5. TO BE INSTALLED IN FUTURE BUILDOUT
6. SET THERMOSTAT TEMPERATURE AND REMOVE CONTROL KNOB TO ALLOW FOR TAMPER PROOF OPERATION. TURN OVER CONTROL KNOB TO OWNER

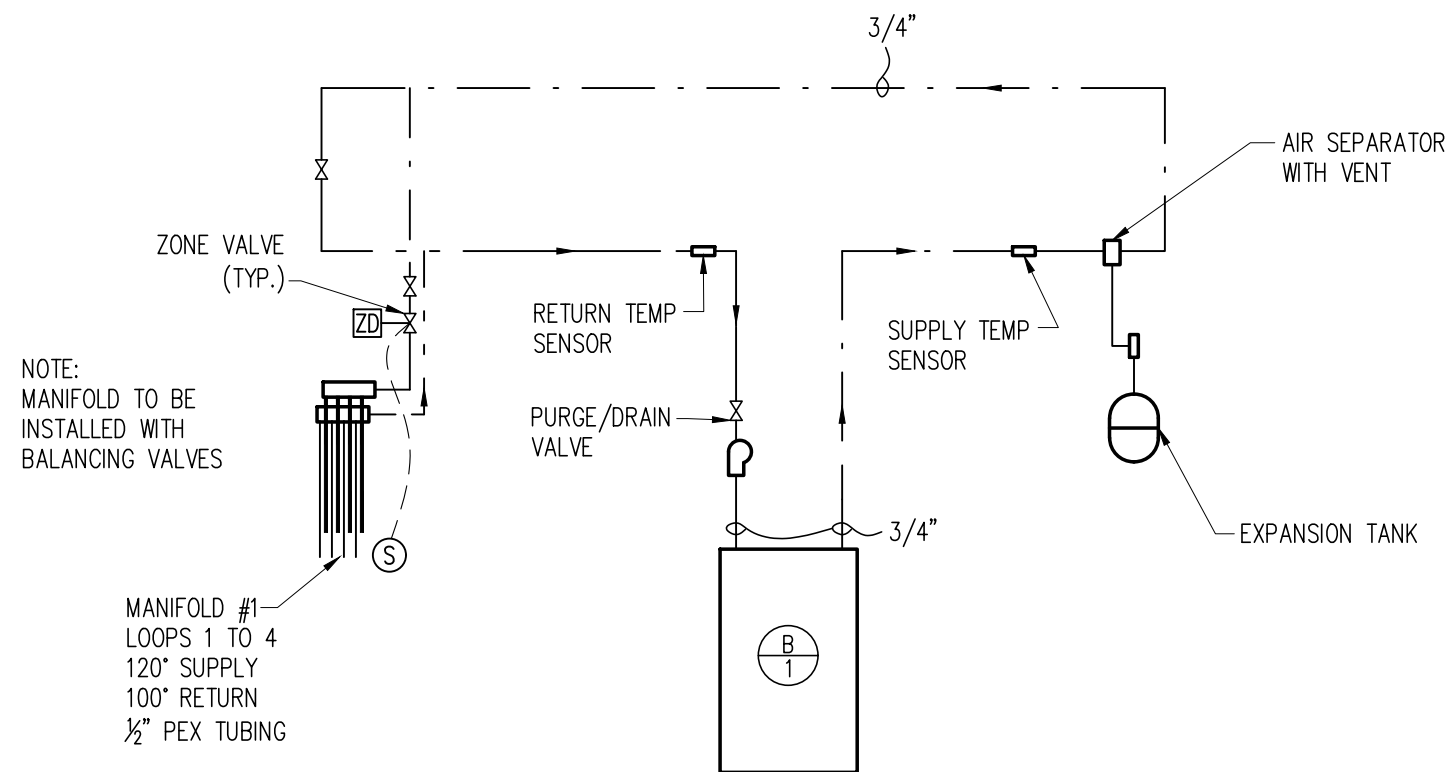
MECHANICAL GENERAL NOTES

1. ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH STATE AND LOCAL CODES.
2. INSTALL ALL EQUIPMENT IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
3. CONTRACTOR IS RESPONSIBLE FOR VERIFYING AND COORDINATING FINAL HVAC EQUIPMENT LOCATIONS WITH OTHER TRADES AND ENGINEER.
4. PROVIDE (2) COPIES OF 3-RING BINDERS WITH O&M MANUALS, AND BALANCING REPORT TO AC/a. PROVIDE START-UP TO ASSURE AN EFFICIENTLY OPERATING SYSTEM TO THE OWNER'S SATISFACTION.
5. ANY HVAC PENETRATIONS THROUGH FIRE RATED ASSEMBLIES SHALL BE A U.L. LISTED ASSEMBLY. MATCHING THE HOURLY RATING OF THE FLOOR/WALL PENETRATION. SEE ARCHITECTURAL PLANS FOR LOCATIONS OF THE FIRE RATED ASSEMBLIES AND U.L. PENETRATION DETAILS.
6. ALL L.P. GAS FIRED APPLIANCES SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND ACCORDING TO FEDERAL, STATE, AND LOCAL CODE REQUIREMENTS. CONTRACTOR SHALL INSTALL ALL GAS PIPING AND CONNECT TO ALL APPLIANCES PER NFPA 54. ALL PIPING SHALL BE BLACK IRON STEEL IN ACCESSIBLE AREAS. CORRUGATED STAINLESS STEEL IN CONCEALED SPACES. PROVIDE RIGID, GAS COCK AND FLEXIBLE CONNECTOR AT EACH APPLIANCE ALONG WITH REGULATORS AS REQUIRED. REGULATORS, IF REQUIRED, SHALL REDUCE THE L.P. GAS PRESSURE TO THE FINAL PRESSURE REQUIRED BY THE SPECIFIC APPLIANCE CONNECTED.
7. MECHANICAL CONTRACTOR TO PROVIDE AND INSTALL ALL LOW VOLTAGE WIRING RELATED TO THE HVAC SYSTEM PER LOCAL, STATE AND NATIONAL CODES.





2
M2.1
INFLOOR TUBING DETAIL
SCALE: N.T.S.



3
M2.1
INFLOOR SCHEMATIC
NOT TO SCALE

1
M2.1
HVAC INFLOOR HEATING PLAN
SCALE: 1/2" = 1'-0"

BOILER SCHEDULE										
PLAN SYMBOL	RM. #	HEATING MEDIUM	% GLYCOL	INPUT MBH	OUTPUT MBH	AFUE	FUEL TYPE	BOILER TYPE	IGNITION TYPE	ELEC. CHAR.
B-1	MECH. 107	WATER	30	30.7	30.7	-	-	ELEC.	-	240/60/1

NOTES:
1. EQUIPMENT OF EQUAL QUALITY AND PERFORMANCE MAY BE SUBMITTED WITH PRIOR APPROVAL.

PUMP SCHEDULE								
PLAN SYMBOL	SERVING	FLOW (GPM)	FTHD	VOLT	MCA	HP	REPR. MFG. & MODEL NO.	NOTES
P-1	INFLOOR SYSTEM	3	13.8	120	FRAC.	FRAC.	GRUNDFOS - 15-58	1

NOTES:
1. EQUIPMENT OF EQUAL QUALITY AND PERFORMANCE MAY BE SUBMITTED WITH PRIOR APPROVAL.

IN-FLOOR PIPING GENERAL NOTES	
1.	TEST PIPING IN ACCORDANCE WITH IMC 2009 SECTIONS 1208 & 1209 AND MANUFACTURES RECOMMENDATIONS
2.	PIPING SHALL BE PRESSURIZED TO FULL DIAMETER AND MAINTAINED WHILE CONCRETE IS POURED
3.	PIPING SYSTEM TO BE DESIGNED IN ACCORDANCE WITH IMC 2009 SECTION 1206
4.	PROVIDE COMBUSTION AIR INTAKES NOT LESS THAN 12 INCHES VERTICALLY FROM THE ADJOINING GRADE LEVEL
5.	LOCATE VENT TERMINALS FOR DIRECT VENT APPLIANCES WITH AN INPUT OVER 50,000 BTU/H AT LEAST A 12" VENT TERMINATION CLEARANCE FROM ANY AIR OPENING INTO THE BUILDING, UNLESS THE APPLIANCE LISTING PROVIDES A DIFFERENT CLEARANCE CRITERIA
6.	PROVIDE RADIANT FLOOR HEATING SYSTEMS WITH A THERMAL BARRIER. SLAB ON GRADE INSTALLATIONS SHALL BE PROVIDED WITH INSULATING MATERIALS INSTALLED BENEATH THE PIPING HAVING A MINIMUM R-VALUE OF 5

MINIMUM PIPE INSULATION (THICKNESS IN INCHES)		
FLUID	NOMINAL PIPE DIAMETER	
	≤ 1.5"	≥ 1.5"
STEAM	1 1/2" (R-6)	3" (R-11)
HOT WATER	1 1/2" (R-6)	2" (R-8)
CHILLED WATER, BRINE OR REFRIGERANT	1 1/2" (R-6)	1 1/2" (R-6)

PROJECT:

NEW BATHROOM FACILITY
ST. CROIX COUNTY RIVER LOOP CROSSING
HOULTON, WISCONSIN

SHEET NO.

M2.1

BRANCH OFFICE

2820 Kahle Street
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meh@authconsulting.com

Auth•Consulting/associates

DRAWING PHASE:

OWNER REVIEW

AGENCY REVIEW

BID DOCUMENT

FOR CONSTRUCTION

AS-BUILT DOCUMENT

DRAWN BY:

KTG

CHECKED BY:

DWA

DATE:

08/07/17

DWG FILE:

REF FILE:

5276-003

JOB NUMBER:

5276-003

BID SET

OWNERS FINAL REVIEW SET

REVISION DESCRIPTION:

1-26-18

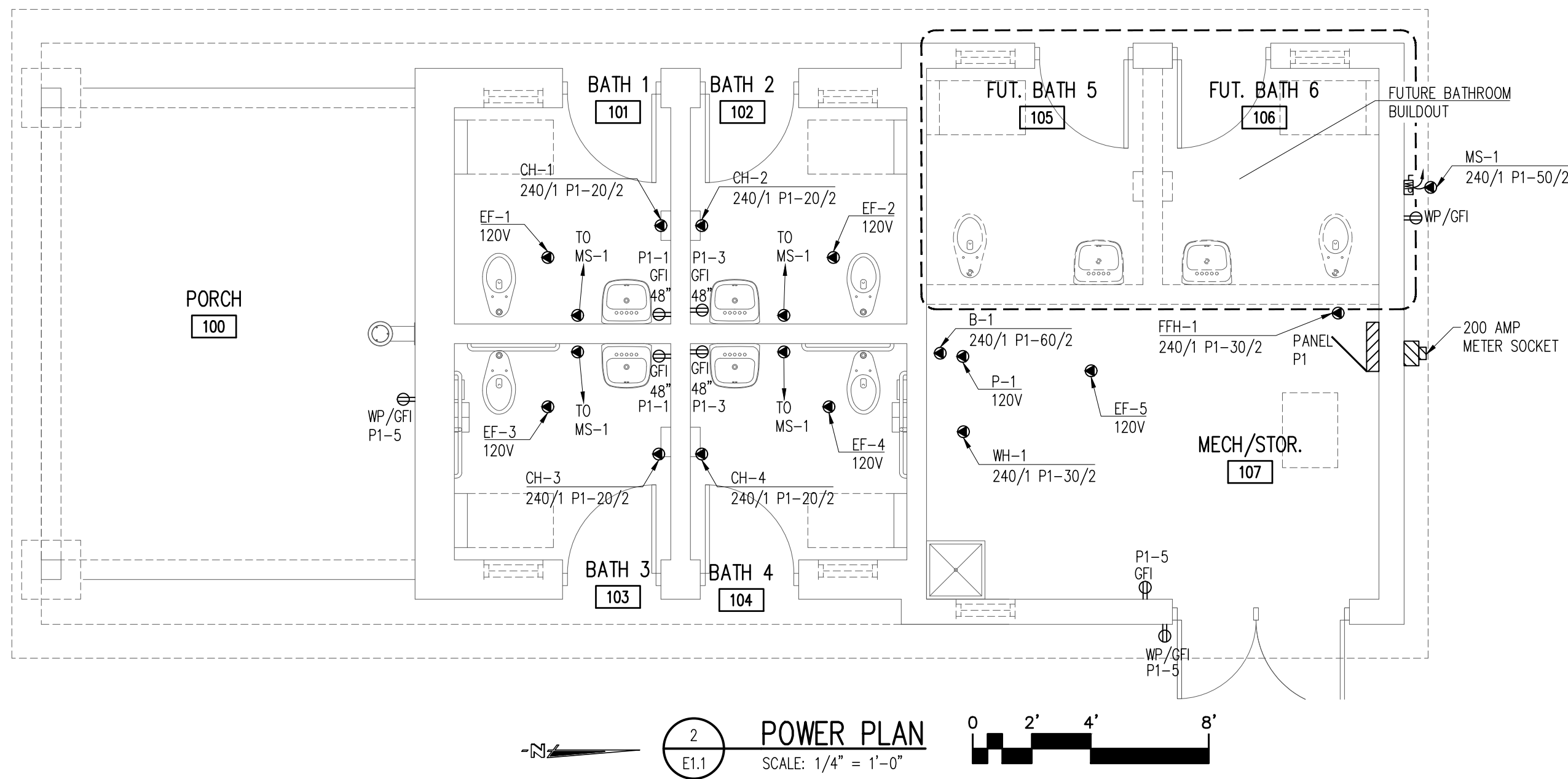
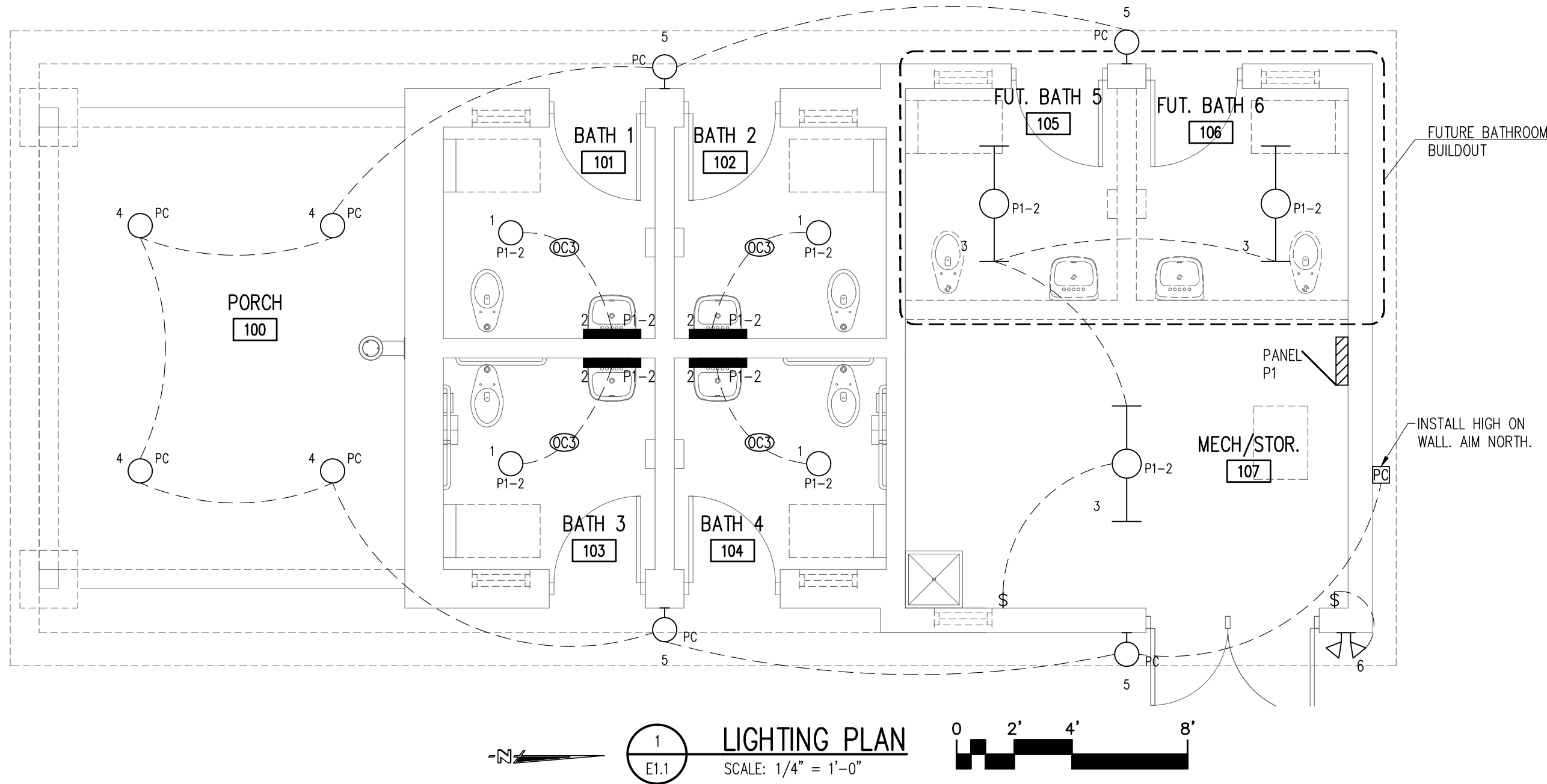
DWA

NAME:

9-1-17

DWA

DATE:



LIGHTING FIXTURE SCHEDULE						
TYPE	MANUFACTURER	MODEL #	LAMPS	WATTAGE	DESCRIPTION	NOTES
1	LIGHTOLIER	S7R840K10	LED	15	7" LED DOWNLIGHT, 1000 LUMEN, 4000K, 80 CRI	-
2	DAYBRITE	LPLS2L30-40K-UNV-F1	LED	30	2' LED WALL MOUNT VANITY FIXTURE, 2080 LUMEN, 4000K, 80 CRI	-
3	DAYBRITE	FSS45SL840-UNV-DIM	LED	55	4' LED SURFACE MOUNT STRIP FIXTURE, 5500 LUMEN, 4000K, 80 CRI	-
4	DMF	DRDHNC6 DRD3M10940FLWH DRD2TR6SWH	LED	15	6" RECESSED CAN LED FIXTURE, 40" ADJUSTABLE TILT, 1000 LUMEN, 4000K, 90 CRI	-
5	DMF	DCC2WMM1040BZ	LED	15	WALL MOUNT CYLINDER LED DOWNLIGHT, 1000 LUMEN, 4000K, 90 CRI, BRONZE FINISH.	-
6	PATRIOT	E6922BZ	LED	26	DUAL HEAD LED FLOOD LIGHT, 2000 LUMEN, 5000K, BRONZE FINISH	-

GENERAL NOTES:

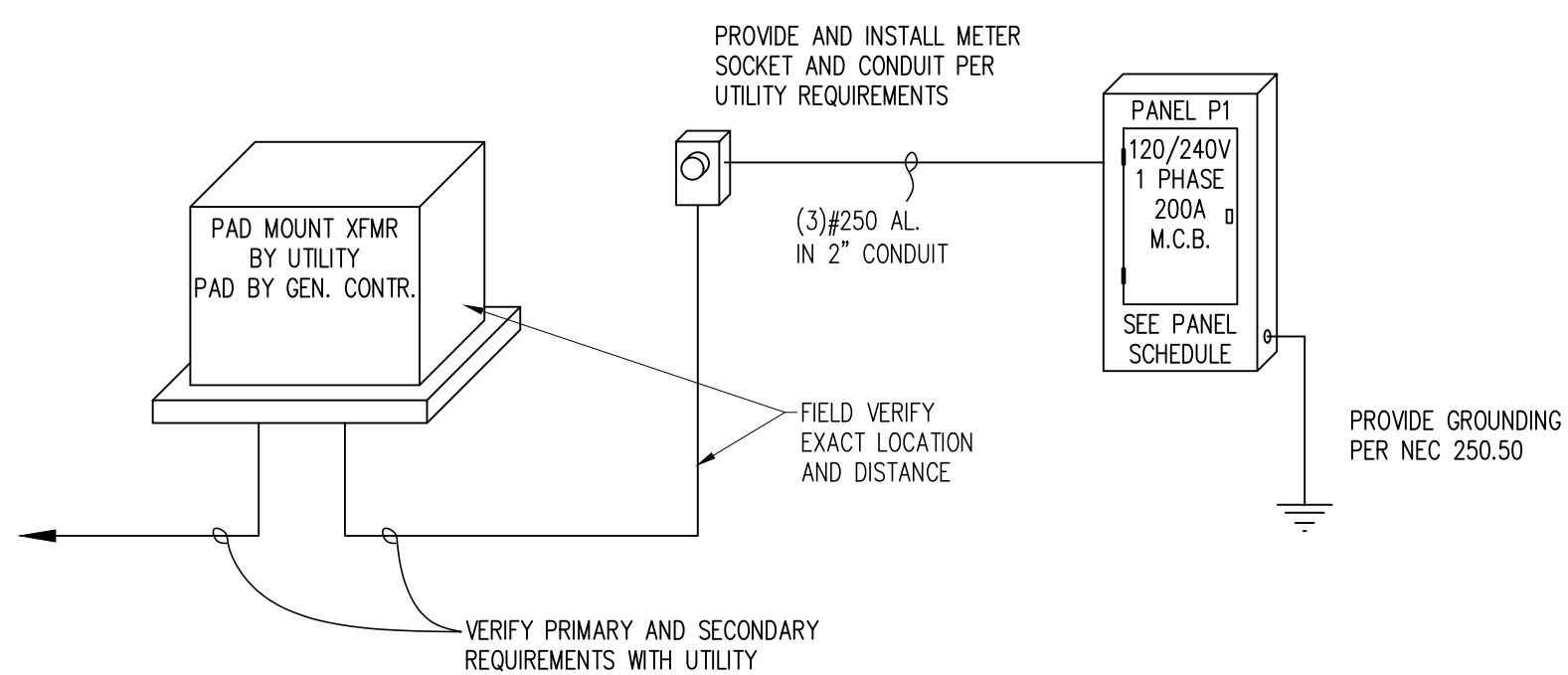
- PROVIDE ALL REQUIRED MOUNTING ACCESSORIES TO INSTALL A COMPLETE FINISHED AND OPERABLE LIGHTING SYSTEM TO THE OWNERS SATISFACTION.
- CODE COMPLIANCE - IECC 2009 AS ALLOWED BY THE IECC 501.2 AMENDED BY SPS 363.0501.
- SUBSTITUTE FIXTURES SHALL BE EQUAL TO SPECIFIED FIXTURE IN APPEARANCE AND QUALITY - BALLAST TYPE, LAMP TYPE, AND WATTAGE SHALL REMAIN THE SAME.
- FINISH OF FIXTURES SHALL BE UNIFORM IN QUALITY AND APPEARANCE, DURABLE AND FREE OF DEFECTS.

NOTES:

EQUIPMENT CONNECTION SCHEDULE					
EQUIPMENT NAME	MCA	HP/KW	VOLT/PH	DISCONNECTING MEANS	NOTES
MS-1	42.1	-	240/1	PROVIDE NEMA 3R DISCONNECT	-
EF-1,2,3,4,5	1.73	-	120V	INTEGRAL ON UNIT	-
WH-1	31.25	4.5 KW	240/1	BREAKER - PANEL P1	-
B-1	46.87	9 KW	240/1	BREAKER - PANEL P1	-
P-1	FRAC.	-	120V	PROVIDE SNAP SWITCH	-
FFH-1	26	5 KW	240/1	BREAKER - PANEL P1	-
CH-1	4.6	.9 KW	240/1	BREAKER - PANEL P1	-
CH-2	4.6	.9 KW	240/1	BREAKER - PANEL P1	-
CH-3	4.6	.9 KW	240/1	BREAKER - PANEL P1	-
CH-4	4.6	.9 KW	240/1	BREAKER - PANEL P1	-

GENERAL NOTES:

- ELECTRICAL CONTRACTOR SHALL PROVIDE AND INSTALL ALL LISTED DISCONNECTS.
- ALL DISCONNECT SWITCHES SHALL BE GENERAL DUTY TYPE LISTED AND RATED FOR LOCATION SHOWN.



3
E1.1
POWER DISTRIBUTION RISER
NO SCALE

FED FROM		UTILITY		VOLT 120/240		AMPS 200		NOTES:		PANEL	
LOCATION		MECH. ROOM		PHASE 1		MAIN M.C.B.				P1	
TRIM		SURFACE		WIRE 3		KAIC					
CKT #	BREAKER AMP/POLE	CIRCUIT NAME	KW	PHASE		KW	CIRCUIT NAME	BREAKER AMP/POLE	CKT #		
				A	B						
1	20/1	RECEPTACLE	0.36	0.61		0.25	INTERIOR LIGHTING	20/1	2		
3	20/1	RECEPTACLE	0.36			0.42 0.06	EXTERIOR LIGHTING	20/1	4		
5	20/1	RECEPTACLE	0.54	0.63		0.09	CP-1	20/1	6		
7	20/1	SPARE				0.17 0.17	EF-1,2,3,4,5	20/1	8		
9	20/1	SPARE		0.00			SPARE	20/1	10		
11	20/1	SPARE				0.00	SPARE	20/1	12		
13	20/2	CH-1,2	0.90	1.80		0.90	CH-3,4	20/2	14		
15			0.90		1.80	0.90			16		
17			4.03	6.53		2.50			18		
19			4.03		6.53	2.50			20		
21	30/2	WH-1	2.25	6.75		4.50	B-1	60/2	22		
23			2.25		6.75	4.50			24		
25			1.20	2.40		1.20			26		
27			1.20		1.50	0.30			28		
29				0.00					30		
31						0.00			32		
33				0.00					34		
35						0.00			36		
37				0.00					38		
39						0.00			40		
41				0.00					42		
PROVIDE WITH EQUIPMENT GROUND BAR			18.72	17.17	BREAKERS SHALL BE PLUG-ON TYPE						
TOTAL CONNECTED (KVA)			35.894								
TOTAL DEMAND AMPS			150								

ELECTRIC GENERAL NOTES

- ALL WORK SHALL BE COMPLETED IN ACCORDANCE WITH NATIONAL, STATE AND LOCAL ELECTRICAL CODES.
- COORDINATE WORK WITH ALL OTHER TRADES.
- EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- ALL WIRING SHALL BE INSTALLED IN APPROVED RACEWAYS.
- ALL EQUIPMENT GROUNDING CONDUCTORS SHALL BE INSTALLED AT ALL LOCATIONS.
- USE COMMERCIAL GRADE RECEPTACLES AND SWITCHES. PROVIDE LIGHT ALMOND COLORED DEVICE AND PLATES.
- ALL MEASUREMENTS TO TOP OF BOX. RECEPTACLES SHALL BE 20" A.F.F. SWITCHES SHALL BE 48" A.F.F.

LIGHTING LEGEND

	SINGLE POLE SWITCH
	WALL MOUNTED SINGLE LEVEL OCCUPANCY SENSOR DUAL TECHNOLOGY
	WALL MOUNTED DUAL LEVEL OCCUPANCY SENSOR DUAL TECHNOLOGY
	CEILING MOUNTED OCCUPANCY SENSOR DUAL TECHNOLOGY
	NL INDICATES FIXTURE TO REMAIN ON FOR SECURITY PURPOSES
	A,B INDICATES LIGHT FIXTURE SWITCH-LEGS
	P-X INDICATES PANEL AND CIRCUIT NUMBER
	INDICATES LIGHT FIXTURE TYPE
PC	INDICATES CONTROLLED BY PHOTOCELL

POWER & COMMUNICATION LEGEND

	MOTOR CONNECTION
	ELECTRICAL DISCONNECT
	ELECTRICAL CONNECTION W/NON-FUSED DISCONNECT
	ELECTRICAL CONNECTION W/WEATHER PROOF DISCONNECTS
	ELECTRICAL CONNECTION W/20A SWITCH FUSE
	PANELBOARD
	THERMOSTAT MOUNTED AT 48" A.F.F.

ABBREVIATION LEGEND

IG	INDICATES ISOLATED GROUND RECEPTACLE	EX	INDICATES EXISTING DEVICE/FIXTURE
MCA	INDICATES MINIMUM CIRCUIT AMPACITY	RL	INDICATES RELOCATED DEVICE/FIXTURE
FLA	INDICATES FULL LOAD AMPACITY	TC	INDICATES DEVICE/FIXTURE CONTROLLED BY TIMECLOCK
M.L.O.	INDICATES MAIN LUG ONLY	EM	INDICATES EMERGENCY DEVICE/FIXTURE
M.C.B.	INDICATES MAIN CIRCUIT BREAKER	GFI	INDICATES GROUND FAULT INTERRUPTING RECEPTACLE
WP	INDICATES WEATHER PROOF DEVICE/COVER		

DRAWING PHASE:

OWNER REVIEW

AGENCY REVIEW

BID DOCUMENT

FOR CONSTRUCTION

AS-BUILT DOCUMENT

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KTG

CHECKED BY:

DWA

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BRANCH OFFICE

2820 Kahoe Street
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PROJECT:

NEW BATHROOM FACILITY
ST. CROIX COUNTY RIVER LOOP CROSSING
HOULTON, WISCONSIN

SHEET NO.

E1.1

ELECTRICAL FLOOR PLAN

AIA[®] Document A105[™] – 2007

Standard Form of Agreement Between Owner and Contractor for a Residential or Small Commercial Project

AGREEMENT made as of the «» day of «» in the year «»
(In words, indicate day, month and year.)

BETWEEN the Owner:

~~(Name, legal status, address and other information)~~ (Name and Address)

«St. Croix County»« »
«1101 Carmichael Road»
«Hudson, WI»
«54016»

and the Contractor:

~~(Name, legal status, address and other information)~~ (Name and Address)

«» «»
« » »
« » »
« » »

for the following Project:

~~(Name, location and detailed description)~~ (Name and Locations)

«St. Croix River Loop Crossing Trailhead Restroom Building»
«77 Houlton School Circle»
«Houlton, WI 54082»

The Architect: PLEASE NOTE: ANY REFERENCE MADE IN THIS DOCUMENT TO
“ARCHITECT” SHALL MEAN “CONSULTANT”

~~(Name, legal status, address and other information)~~

«Michael Huber Architects, LLC »«»
«351 Highview Road»
«Hudson, WI»
«54016»

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS:

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

State or local law may impose requirements on contracts for home improvements. If this document will be used for Work on the Owner's residence, the Owner should consult local authorities or an attorney to verify requirements applicable to this Agreement.

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TABLE OF ARTICLES

- 1 THE CONTRACT DOCUMENTS
- 2 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION DATE
- 3 CONTRACT SUM
- 4 PAYMENT
- 5 INSURANCE
- 6 GENERAL PROVISIONS
- 7 OWNER
- 8 CONTRACTOR
- 9 ARCHITECT
- 10 CHANGES IN THE WORK
- 11 TIME
- 12 PAYMENTS AND COMPLETION
- 13 PROTECTION OF PERSONS AND PROPERTY
- 14 CORRECTION OF WORK
- 15 MISCELLANEOUS PROVISIONS
- 16 TERMINATION OF THE CONTRACT
- 17 OTHER TERMS AND CONDITIONS

ARTICLE 1 THE CONTRACT DOCUMENTS

§ 1.1 The Contractor shall complete the Work described in the Contract Documents for the Project. The Contract Documents consist of

- .1 this Agreement signed by the Owner and Contractor;
- .2 the drawings and specifications prepared by the Architect, dated « December 2017 », and enumerated as follows:

Drawings:

Number	Title	Date
A101,A102,A201,A301,A302, A303,S001,S101,P1.1,P2.1, M1.1,M2.1,E1.1	Construction Documents	2/12/18

Specifications:

Section	Title	Pages
« Divisions 1-11 »	River Loop Crossing Trailhead	All

- .3 addenda prepared by the Architect as follows:

Number	Date	Pages

- .4 ~~written orders for changes in the Work~~ change orders issued after execution of this Agreement; and

- .5 other documents, if any, identified as follows: AIA document A201-2007 as modified, Standard Terms and Conditions, and performance and payment bond.

« »

ARTICLE 2 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

The number of calendar days available to the Contractor to substantially complete the Work is the Contract Time. The date of commencement of the Work shall be the date of this Agreement unless otherwise indicated below. The Contractor shall substantially complete the Work, no later than « » («120») calendar days from the date of commencement, subject to adjustment as provided in Article 10 and Article 11.

(Insert the date of commencement, if it differs from the date of this Agreement.)

« »

ARTICLE 3 CONTRACT SUM

§ 3.1 Subject to additions and deductions in accordance with Article 10, the Contract Su

§ 3.2 For purposes of payment, the Contract Sum includes the following values related to portions of the Work:
(Itemize the Contract Sum among the major portions of the Work.)

Portion of Work	Value

§ 3.3 Unit prices, if any, are as follows:

(Identify and state the unit price; state the quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit (\$0.00) <u>(\$0.00)</u>

§ 3.4 Allowances included in the Contract Sum, if any, are as follows:

(Identify allowance and state exclusions, if any, from the allowance price.)

Item	Price

§ 3.5 The Contract Sum is based upon the following alternates, if any, which are described in the Contract Documents and hereby accepted by the Owner:

(State the numbers or other identification of accepted alternates. If the bidding or proposal documents permit the Owner to accept other alternates subsequent to the execution of this Agreement, attach a schedule of such other alternates showing the amount for each and the date when that amount expires.)

§ 3.6 The Contract Sum shall include all items and services necessary for the proper execution and completion of the Work.

ARTICLE 4 PAYMENT

§ 4.1 Based on Contractor's Applications for Payment certified by the ~~Architect~~, Architect and Owner, the Owner shall pay the Contractor, in accordance with Article 12, as follows:

(Insert below timing for payments and provisions for withholding retainage, if any.)

« »

Determined in accordance with Sec. 66.0901 (9)(b) of the Wisconsin State Statutes if progress payments are made, 5% will be withheld until 50% of the work has been completed, at 50% completion when the progress is not

satisfactory, additional amounts may be retained. Upon substantial completion of this work an amount retained may be paid to the contractor, retaining at all times an amount sufficient to cover the estimated cost of work still to be completed.

~~§ 4.2 Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the rate below, or in the absence thereof, at the legal rate prevailing at the place of the Project.~~

« » % « »

ARTICLE 5 INSURANCE

~~§ 5.1 The Contractor shall provide Contractor's general liability and other insurance as follows:
(Insert specific insurance requirements and limits.)~~

Type of insurance

Limit of liability (\$0.00)

« »

~~§ 5.1.1 The Contractor agrees that it will keep in force and effect insurance policies as outlined below.~~

- (a) Workers' Compensation and Employer's Liability Insurance – Statutory Workers' Compensation and Employer's Liability Insurance with a limit of liability not less than \$100,000 each accident, \$500,000 Disease Policy Limit, \$100,000 Disease each employee. Contractor shall require subcontractors not protected under its insurance to take out and maintain such insurance.

Owner shall not be liable to Contractor or its employees for any injuries to Contractor's employees arising out of the performance of work under this agreement. Contractor and its workers' compensation insurance carrier agree to waive any and all rights of recovery from Owner for workers' compensation claims made by its employees. Contractor agrees that the indemnification and hold harmless provisions with Paragraph 8.12 extends to any claim brought by or on behalf of any employee of the Contractor.

- (b) Commercial General Liability Insurance – Policy shall be written to provide coverage for, but not limited to, premises and operations, product and completed operations, personal injury, blanket contractual, broad form property damage, independent contractors, XCU-explosion collapse, underground coverage. Limits of liability shall not be less than \$1,000,000 each occurrence, \$1,000,000 aggregate. Policy shall be endorsed to provide for the per project application of limits (ISO endorsement CG2503 or equivalent) or general aggregate must be waived in entirety. The Owner, its boards, commissions, agencies, officers, employees and representatives shall be named as additional insureds on a primary basis and so stated on the Certificate of Insurance.
- (c) Automobile Liability Insurance – Business automobile policy covering all owned, hired and non-owned private passenger and commercial vehicles. Limit of liability not less than \$500,000 combined single limit.
- (d) Umbrella Liability Insurance – Coverage to be in excess of employer's liability, commercial general liability, and automobile liability insurance. Limits of liability not less than \$1,000,000 each occurrence, \$1,000,000.00 aggregate.
- (e) Builder's Risk Insurance – Coverage to be 100% of the total project value. The Owner, its boards, commissions, agencies, officers, employees and representatives shall be named as additional insureds on a primary basis and so stated on the Certificate of Insurance.

~~§ 5.2 The Owner shall provide property insurance to cover the value of the Owner's property, including any Work provided under this Agreement. The Contractor is entitled to receive an increase in the Contract Sum equal to the insurance proceeds related to a loss for damage to the Work covered by the Owner's property insurance.~~

~~§ 5.3 The Contractor shall obtain an endorsement to its general liability insurance policy to cover the Contractor's obligations under Section 8.12.~~

~~§ 5.4 Each party shall provide certificates of insurance showing their respective coverages~~ The Contractor shall provide to the Owner a certificate of insurance showing their coverages as per 5.1.1., prior to commencement of the Work.

~~§ 5.5 Unless specifically precluded by the Owner's property insurance policy, the Owner and Contractor waive all rights against (1) each other and any of their subcontractors, suppliers, agents and employees, each of the other; and (2) the Architect, Architect's consultants and any of their agents and employees, for damages caused by fire or other causes of loss to the extent covered by property insurance or other insurance applicable to the Work.~~

ARTICLE 6 GENERAL PROVISIONS

§ 6.1 THE CONTRACT

The Contract represents the entire and integrated agreement between the parties and supersedes prior negotiations, representations or agreements, either written or oral. The Contract may be amended or modified only by a written modification in accordance with Article 10.

§ 6.2 THE WORK

The term "Work" means the construction and services required by the Contract Documents, and includes all other labor, materials, equipment and services provided, or to be provided, by the Contractor to fulfill the Contractor's obligations.

§ 6.3 INTENT

The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all. all performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

§ 6.4 OWNERSHIP AND USE OF ARCHITECT'S DRAWINGS, SPECIFICATIONS AND OTHER DOCUMENTS

~~Documents prepared by the Architect are instruments of the Architect's service~~ Drawings, specifications and other documents, including those in electronic form, prepared by the Architect and the Architect's consultants are Instruments of Service for use solely with respect to this Project. The Architect shall retain all common law, statutory and other reserved rights, including the copyright. The Contractor, subcontractors, sub-subcontractors, and material or equipment suppliers are authorized to use and reproduce the instruments of service solely and exclusively for execution of the Work. The instruments of service may not be used for other Projects or for additions to this Project outside the scope of the Work without the specific written consent of the Architect. project and any remodeling, reconstruction or repair of the Project and the completed Project. The Owner shall be deemed the Owner of the Instruments of Service.

ARTICLE 7 OWNER

§ 7.1 INFORMATION AND SERVICES REQUIRED OF THE OWNER

~~§ 7.1.1 If requested by the Contractor, the~~ The Owner shall furnish all necessary surveys and a legal description of the site, if the Owner and Contractor deem it necessary.

~~§ 7.1.2 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, the Owner shall obtain and pay for other necessary approvals, easements, assessments and charges.~~

§ 7.2 OWNER'S RIGHT TO STOP THE WORK

If the Contractor fails to correct Work which is not in accordance with the Contract Documents, the Owner may direct the Contractor in writing to stop the Work until the correction is made.

§ 7.3 OWNER'S RIGHT TO CARRY OUT THE WORK

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a seven day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies, correct such deficiencies. In such case, the Contract Sum shall be adjusted to deduct the cost of correction from payments due the Contractor.

§ 7.4 OWNER'S RIGHT TO PERFORM CONSTRUCTION AND TO AWARD SEPARATE CONTRACTS

§ 7.4.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and to award separate contracts in connection with other portions of the Project.

§ 7.4.2 The Contractor shall coordinate and cooperate with the Owner's own forces and separate contractors employed by the Owner.

§ 7.4.3 Costs caused by delays or by improperly timed activities or defective construction shall be borne by the party responsible therefor.

ARTICLE 8 CONTRACTOR

§ 8.1 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

§ 8.1.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become familiar with local conditions under which the Work is to be performed and correlated personal observations with requirements of the Contract Documents.

§ 8.1.2 The Contractor shall carefully study and compare the Contract Documents with each other and with information furnished by the Owner. Before commencing activities, the Contractor shall (1) take field measurements and verify field conditions; (2) carefully compare this and other information known to the Contractor with the Contract Documents; and (3) promptly report errors, inconsistencies or omissions discovered to the Owner and Architect.

§ 8.2 CONTRACTOR'S CONSTRUCTION SCHEDULE

The Contractor, promptly after being awarded the Contract, shall prepare and submit for the Owner's and Architect's information a Contractor's construction schedule for the Work.

§ 8.3 SUPERVISION AND CONSTRUCTION PROCEDURES

§ 8.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for and have control over construction means, methods, techniques, sequences and procedures, and for coordinating all portions of the Work. Contractor shall provide owner with lien waivers for all payments for work completed.

§ 8.3.2 The Contractor, as soon as practicable after award of the Contract, shall furnish in writing to the Owner through the Architect the names of subcontractors or suppliers for each portion of the Work. The Contractor shall not contract with any subcontractor or supplier to whom the Owner or Architect have made a timely and reasonable objection.

§ 8.4 LABOR AND MATERIALS

§ 8.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work.

§ 8.4.2 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Contract Work. The Contractor shall not permit employment of unfit persons or persons not skilled in tasks assigned to them.

§ 8.4.3 The Contractor shall deliver, handle, store and install materials in accordance with manufacturers' instruction.

§ 8.5 WARRANTY

The Contractor warrants to the Owner and Architect that: (1) materials and equipment furnished under the Contract will be new and of good quality unless otherwise required or permitted by the Contract Documents; (2) the Work will be free from defects not inherent in the quality required or permitted; and (3) the Work will conform to the requirements of the Contract Documents.

§ 8.5.1 All warranties shall begin at the time of Substantial Completion.

§ 8.6 TAXES

The Contractor shall pay sales, consumer, use and similar taxes that are legally required when the Contract is executed.

§ 8.7 PERMITS, FEES AND NOTICES

§ 8.7.1 The Contractor shall obtain and pay for the building permit and other permits and governmental fees, licenses and inspections necessary for proper execution and completion of the Work.

§ 8.7.2 The Contractor shall comply with and give notices required by agencies having jurisdiction over the Work. If the Contractor performs Work ~~knowing it to be that is~~ contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume full responsibility for correction of such Work and shall bear the attributable ~~costs.~~ costs, losses and expenses attribute to correction. The Contractor shall promptly notify the Architect in writing of any known inconsistencies in the Contract Documents with such governmental laws, rules and regulations.

§ 8.8 SUBMITTALS

The Contractor shall promptly review, approve in writing and submit to the Architect Shop Drawings, Product Data, Samples and similar submittals required by the Contract Documents. Shop Drawings, Product Data, Samples and similar submittals are not Contract Documents.

§ 8.9 USE OF SITE

The Contractor shall confine operations at the site to areas permitted by law, ordinances, permits, the Contract Documents and the Owner.

§ 8.10 CUTTING AND PATCHING

The Contractor shall be responsible for cutting, fitting or patching required to complete the Work or to make its parts fit together properly.

§ 8.11 CLEANING UP

The Contractor shall keep the premises and surrounding area free from accumulation of debris and trash related to the Work. At the completion of the Work, the Contractor shall remove its tools, construction equipment, machinery and surplus material; and shall properly dispose of waste materials.

§ 8.12 INDEMNIFICATION

To the fullest extent permitted by law, the Contractor shall ~~indemnify~~ indemnify, defend and hold harmless the Owner, Architect, Architect's consultants and agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, personal injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the ~~negligent~~ acts or omissions of the Contractor, a subcontractor, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder.

ARTICLE 9 ARCHITECT

§ 9.1 The Architect will provide administration of the Contract as described in the Contract Documents. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 9.2 The Architect will visit the site at intervals appropriate to the stage of construction to become ~~generally~~ familiar with the progress and quality of the Work.

§ 9.3 The Architect will not have control over or charge of, and will not be responsible for, construction means, methods, techniques, sequences or procedures, or for safety precautions and programs in connection with the Work, since these are solely the Contractor's responsibility. ~~The Architect will not be responsible for the Contractor's failure to carry out the Work in accordance with the Contract Documents.~~

§ 9.4 Based on the Architect's observations and evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor.

§ 9.5 The Architect has authority to reject Work that does not conform to the Contract Documents.

§ 9.6 The Architect will promptly review and approve or take appropriate action upon Contractor's submittals, such as shop drawings, product data, and samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 9.7 The Architect will promptly interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request from either the Owner or Contractor.

§ 9.8 Interpretations and decisions of the Architect will be consistent with the intent of and reasonably inferable from the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either and will not be liable for results of interpretations or decisions rendered in good faith.

~~**§ 9.9** The Architect's duties, responsibilities and limits of authority as described in the Contract Documents shall not be changed without written consent of the Owner, Contractor and Architect. Consent shall not be unreasonably withheld.~~

ARTICLE 10 CHANGES IN THE WORK

§ 10.1 The Owner, without invalidating the Contract, may order changes in the Work within the general scope of the Contract consisting of additions, deletions or other revisions, the Contract Sum and Contract Time being adjusted accordingly in writing. ~~If the Owner and Contractor can not agree to a change in the Contract Sum, the Owner shall pay the Contractor its actual cost plus reasonable overhead and profit.~~

§ 10.2 The Architect will have authority to order minor changes in the Work not involving changes in the Contract Sum or the Contract Time and not inconsistent with the intent of the Contract Documents. Such orders shall be in writing and shall be binding on the Owner and Contractor. The Contractor shall carry out such orders promptly.

§ 10.3 If concealed or unknown physical conditions are encountered at the site that differ materially from those indicated in the Contract Documents or from those conditions ordinarily found to exist, the Contract Sum and Contract Time shall be subject to equitable adjustment.

ARTICLE 11 TIME

§ 11.1 Time limits stated in the Contract Documents are of the essence of the Contract.

§ 11.2 If the Contractor is delayed at any time in progress of the Work by changes ordered in the Work, or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control, the Contract Time shall be subject to equitable adjustment.

ARTICLE 12 PAYMENTS AND COMPLETION

§ 12.1 CONTRACT SUM

The Contract Sum stated in the Agreement, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 12.2 APPLICATIONS FOR PAYMENT

§ 12.2.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment for Work completed in accordance with the values stated in the Agreement. Such Application shall be supported by data substantiating the Contractor's right to payment as the Owner or Architect may reasonably require. Payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in writing in advance by the Owner, payment may similarly be made for materials and equipment stored, and protected from damage, off the site at a location agreed upon in writing.

§ 12.2.2 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment, all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information and belief, be free and clear of liens, claims, security interests or other encumbrances adverse to the Owner's interests.

§ 12.3 CERTIFICATES FOR PAYMENT

The Architect will, within seven days after receipt of the Contractor's Application for Payment, either issue to the Owner a Certificate for Payment, with a copy to the Contractor, for such amount as the Architect determines is properly due, or notify the Contractor and Owner in writing of the Architect's reasons for withholding certification in whole or in part.

§ 12.4 PROGRESS PAYMENTS

§ 12.4.1 After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner provided in the Contract Documents.

§ 12.4.2 The Contractor shall promptly pay each subcontractor and supplier, upon receipt of payment from the Owner, an amount determined in accordance with the terms of the applicable subcontracts and purchase orders.

§ 12.4.3 Neither the Owner nor the Architect shall have responsibility for payments to a subcontractor or supplier.

§ 12.4.4 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.5 SUBSTANTIAL COMPLETION

§ 12.5.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so the Owner can occupy or utilize the Work for its intended use.

§ 12.5.2 When the Work or designated portion thereof is substantially complete, the Architect will make an inspection to determine whether the Work is substantially complete. When the Architect determines that the Work is substantially complete the Architect shall prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion, shall establish the responsibilities of the Owner and Contractor, and shall fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 12.6 FINAL COMPLETION AND FINAL PAYMENT

§ 12.6.1 Upon receipt of a final Application for Payment, the Architect will inspect the Work. When the Architect finds the Work acceptable and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment.

§ 12.6.2 Final payment shall not become due until the Contractor submits to the Architect releases and waivers of liens, and data establishing payment or satisfaction of obligations, such as receipts, claims, security interests or encumbrances arising out of the Contract.

§ 12.6.3 Acceptance of final payment by the Contractor, a subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 13 PROTECTION OF PERSONS AND PROPERTY

The Contractor shall be responsible for initiating, maintaining and supervising all safety precautions and programs, including all those required by law in connection with performance of the Contract. The Contractor shall take reasonable precautions to prevent damage, injury or loss to employees on the Work, the Work and materials and equipment to be incorporated therein, and other property at the site or adjacent thereto. The Contractor shall promptly remedy damage and loss to property caused in whole or in part by the Contractor, or by anyone for whose acts the Contractor may be liable.

ARTICLE 14 CORRECTION OF WORK

§ 14.1 The Contractor shall promptly correct Work rejected by the Architect as failing to conform to the requirements of the Contract Documents. The Contractor shall bear the cost of correcting such rejected Work, including the costs of uncovering, replacement and additional testing.

§ 14.2 In addition to the Contractor's other obligations including warranties under the Contract, the Contractor shall, for a period of one year after Substantial Completion, correct work not conforming to the requirements of the Contract Documents.

§ 14.3 If the Contractor fails to correct nonconforming Work within a reasonable time, the Owner may correct it in accordance with Section 7.3.

ARTICLE 15 MISCELLANEOUS PROVISIONS

§ 15.1 ASSIGNMENT OF CONTRACT

Neither party to the Contract shall assign the Contract as a whole without written consent of the other.

§ 15.2 TESTS AND INSPECTIONS

§ 15.2.1 At the appropriate times, the Contractor shall arrange and bear cost of tests, inspections and approvals of portions of the Work required by the Contract Documents or by laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities.

§ 15.2.2 If the Architect requires additional testing, the Contractor ~~shall~~ may be requested to perform those tests.

§ 15.2.3 The Owner shall bear cost of tests, inspections or approvals that do not become requirements until after the Contract is executed.

§ 15.3 GOVERNING LAW

~~The Contract shall be governed by the law of the place where the Project is located. This Contract shall be governed by the law of the State of Wisconsin. Any lawsuits related to or arising out of disputes under the Contract shall be commenced and tried in the Circuit Court of St. Croix County, Wisconsin and the Owner and Contractor submit to the exclusive jurisdiction of the Circuit Court for such lawsuits.~~

ARTICLE 16 TERMINATION OF THE CONTRACT

§ 16.1 TERMINATION BY THE CONTRACTOR

If the Architect fails to certify payment as provided in Section 12.3 for a period of 30 days through no fault of the Contractor, or if the Owner fails to make payment as provided in Section 12.4.1 for a period of 30 days, the Contractor may, upon seven additional days' written notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed including reasonable overhead ~~and profit, and profit thereon,~~ and costs incurred by reason of such termination.

§ 16.2 TERMINATION BY THE OWNER FOR CAUSE

§ 16.2.1 The Owner may terminate the Contract if the Contractor

- ~~1 repeatedly refuses~~ or fails to supply enough properly skilled workers or proper materials;
- 2 fails to make payment to subcontractors for materials or labor in accordance with the respective agreements between the Contractor and the subcontractors;
- ~~3 persistently~~ disregards laws, ordinances, or rules, regulations or orders of a public authority having jurisdiction; or
- 4 is otherwise guilty of substantial breach of a provision of the Contract Documents.

§ 16.2.2 When any of the above reasons exist, the Owner, after consultation with the Architect, may without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' written notice, terminate employment of the Contractor and may

- 1 take possession of the site and of all materials thereon owned by the Contractor, and
- 2 finish the Work by whatever reasonable method the Owner may deem expedient.

§ 16.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 16.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 16.2.4 ~~If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, such excess shall be paid to the Contractor. If such costs exceed the unpaid balance, the cost to finish the work exceeds the unpaid balance of the Contract Sum, the~~ Contractor shall pay the difference to the Owner. This obligation for payment shall survive termination of the Contract.

§ 16.3 TERMINATION BY THE OWNER FOR CONVENIENCE

The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause. The Contractor shall be entitled to receive payment for Work executed, and costs incurred by reason of such termination, along with reasonable overhead and profit on the Work not executed.

ARTICLE 17 OTHER TERMS AND CONDITIONS

(Insert any other terms or conditions below.)

§ 17.1 The Contractor will comply with all applicable federal, state and local laws concerning discrimination. This includes not engaging in employment discrimination on the basis of age, race, creed, color, disability, marital status, sex, national origin, ancestry, arrest record, conviction record, membership in the national guard or state defense force or any reserve component of the military forces of the United States or this state, or use or nonuse of lawful products off the employer's premises during nonworking hours.

§ 17.2 If requested, the Contractor shall provide Owner auditors access to and furnish them with information, records and reports regarding powers, duties, activities, organization, property, financial transactions and methods of operation, and any other information, records and reports that relate directly or indirectly to the services being rendered pursuant to this Agreement. The Contractor shall also provide access for the Owner auditors to inspect all property, equipment and facilities that are used or made use of by the Contractor in rendering its services pursuant to this Agreement. The provisions of this paragraph shall continue for a period of three years following completion of the services.

Any information, records and reports provided to or obtained by the Owner pursuant to the preceding paragraph, or which the Owner otherwise comes into possession of pursuant to this Agreement shall be subject to the provisions of Wisconsin's Public Records Law, including provisions regarding limitations upon access based upon trade secret information and state of federal restrictions.

§ 17.3 The Contractor agrees that it is an independent contractor with respect to the services provided pursuant to this Agreement. Nothing in this agreement shall be considered to create the relationship of employer and employee between parties.

§ 17.4 One or more waivers by any party of any term of the contract will not be constructed as a waiver of a subsequent breach of the same or any other term. The consent or approval given by any party with respect to any act by the other party requiring such consent or approval shall not be deemed to waive the need for further consent or approval of any subsequent similar act by such party.

<< >>

This Agreement entered into as of the day and year first written above.

(If required by law, insert cancellation period, disclosures or other warning statements above the signatures.)

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OWNER (Signature)

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<< >>

(Printed name, title and address)

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CONTRACTOR (Signature)

<< >><< >>

<< >>

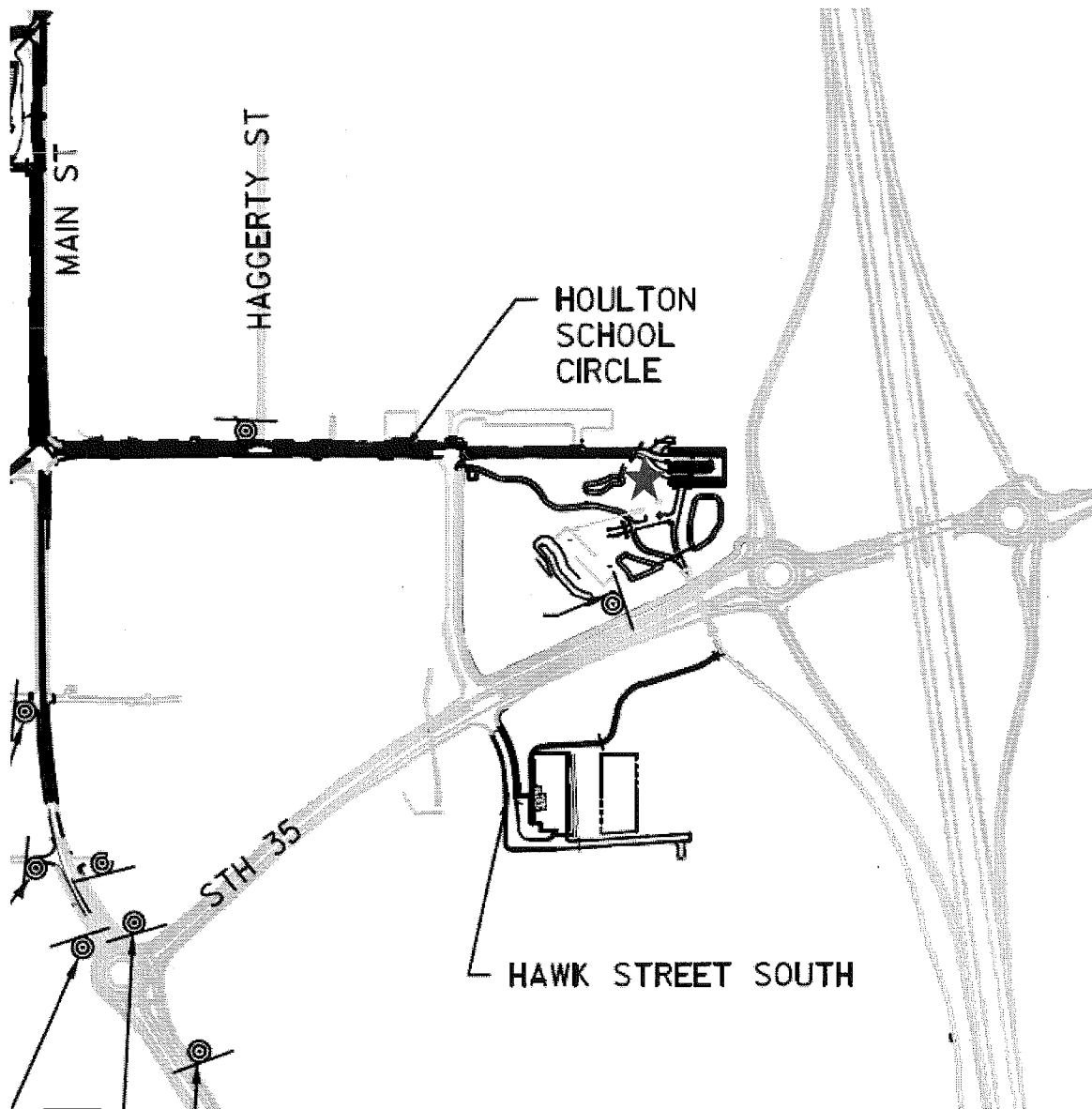
(Printed name, title and address)

LICENSE NO.:

JURISDICTION:

Division 11: PROJECT OVERVIEW

NOTE: The restroom construction project is one of many projects that will be completed as part of the Loop Trail System. The Wisconsin Department of Transportation will be constructing the main trailhead facilities and will accommodate the construction of the restroom building.



PROJECT ID: 8110-02-73

COUNTY: ST. CROIX

ORDER OF SHEETS

Section No. 1	Title
Section No. 2	Typical Sections and Details
Section No. 3	Estimate of Quantities
Section No. 3	Miscellaneous Quantities
Section No. 4	Right of Way Plat
Section No. 5	Plan and Profile
Section No. 6	Standard Detail Drawings
Section No. 7	Sign Plates
Section No. 8	Structure Plans
Section No. 9	Computer Earthwork Data
Section No. 9	Cross Sections

TOTAL SHEETS =



STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PLAN OF PROPOSED IMPROVEMENT

STILLWATER - SOMERSET
LOOP TRAIL SYSTEM (PED/BIKE FACILITY)

STH 64
ST. CROIX COUNTY

STATE PROJECT NUMBER

8110-02-73

STATE PROJECT

8110-02-73

FEDERAL PROJECT

PROJECT

CONTRACT

DESIGN DESIGNATION

	MAIN STREET	OLD STH 64
A.A.D.T. AADT1	= 12,800	15,000
A.A.D.T. AADT2	= 900	-
D.H.V. 2036	= -	-
D.D.	= -	-
T.	= -	-
DESIGN SPEED	= 30/60	-
ESALS	= -	-

CONVENTIONAL SYMBOLS

PLAN	
CORPORATE LIMITS	////
PROPERTY LINE	---
LOT LINE	---
LIMITED HIGHWAY EASEMENT	---
EXISTING RIGHT OF WAY	---
PROPOSED OR NEW R/W LINE	---
SLOPE INTERCEPT	---
REFERENCE LINE	---
EXISTING CULVERT	---
PROPOSED CULVERT (Box or Pipe)	---
COMBUSTIBLE FLUIDS	CAUTION
MARSH AREA	---
WOODED OR SHRUB AREA	---

PROFILE

GRADE LINE	---
ORIGINAL GROUND	---
MARSH OR ROCK PROFILE (To be noted as such)	---
SPECIAL DITCH	---
GRADE ELEVATION	---
CULVERT (Profile View)	---
UTILITIES	---
ELECTRIC	---
FIBER OPTIC	---
GAS	---
SANITARY SEWER	---
STORM SEWER	---
TELEPHONE	---
WATER	---
UTILITY PEDESTAL	---
POWER POLE	---
TELEPHONE POLE	---

END PROJECT 8110-02-73

STA 1082+68.66	STA 2078+42.17
OLD STH 64	MAIN STREET
X=502061.478	X=504879.258
Y=374491.757	Y=377546.656

PROJECT BEGIN

STA 1050+00.00	STA 2007+25.76
OLD STH 64	MAIN STREET
X=499838.592	X=502100.208
Y=372350.703	Y=372435.691



LAYOUT
SCALE 0 2 MI

TOTAL NET LENGTH OF CENTERLINE = 2.401 MI

HORIZONTAL POSITIONS SHOWN ON THIS PLAN ARE WISCONSIN COUNTY COORDINATES, ST. CROIX COUNTY, NAD83 (YEAR IN U.S. SURVEY FEET. VALUES ARE GRID COORDINATES, GRID BEARINGS, AND GRID DISTANCES. GRID DISTANCES MAY BE USED AS GROUND DISTANCES.

STATE OF WISCONSIN
DEPARTMENT OF TRANSPORTATION

PREPARED BY

Surveyor	NW REGION EAU CLAIRE
Designer	TERESA DAVIS
Project Manager	BETH CUNNINGHAM P.E.
Regional Examiner	JENNIFER OLDENBURG
Regional Supervisor	TIMOTHY MASON P.E.
C.O. Examiner	CO EXAMINER

APPROVED FOR THE DEPARTMENT

DATE: 11/17/17 *Beth Cunningham*
(Signature)

E

LIST OF STANDARD ABBREVIATIONS

ABUT.	ABUTMENT
AGG.	AGGREGATE
AH.	AHEAD
APPROX.	APPROXIMATE
A.E.W.	APRON ENDWALL
ASPH.	ASPHALTIC
A.D.T.	AVERAGE DAILY TRAFFIC
AZ.	AZIMUTH
BK.	BACK
BEG.	BEGIN
B.M.	BENCH MARK
C/L	CENTER LINE
CONC.	CONCRETE
CONST.	CONSTRUCTION
CO.	COUNTY
C.T.H.	COUNTY TRUNK HIGHWAY
X-SEC.	CROSS SECTION
CR.	CRUSHED
CFS	CUBIC FEET/SECOND
C.Y., CU. YD.	CUBIC YARD
CULV.	CULVERT
C.P.	CULVERT PIPE
D.O.T.	DEPARTMENT OF TRANSPORTATION
D.H.V.	DESIGN HOUR VOLUME
DIA.	DIAMETER
D.	DIRECTIONAL DISTRIBUTION
DISCH. OR DIS.	DISCHARGE
EA.	EACH
ELECT.	ELECTRIC
EL. OR ELEV.	ELEVATION
EMB.	EMBANKMENT
E.B.S.	EXCAVATION BELOW SUBGRADE
EXIST.	EXISTING
FERT.	FERTILIZE
F.E.	FIELD ENTRANCE
FIN.	FINISHED
FT.	FOOT
F.L.	FLOW LINE
GA.	GAUGE
HORIZ.	HORIZONTAL
CWT.	HUNDREDWEIGHT
INL.	INLET
LT.	LEFT
L.H.F.	LEFT-HAND FORWARD
LIN.	LINEAR
LIN. FT.	LINEAR FOOT
L.S.	LUMP SUM
MAX.	MAXIMUM
MI.	MILE
MISC.	MISCELLANEOUS
N.E.	NORTH EAST
N.W.	NORTH WEST
PAV'T	PAVEMENT
P.C.	POINT OF CURVATURE
P.I.	POINT OF INTERSECTION
P.T.	POINT OF TANGENCY
P.O.T.	POINT ON TANGENT
LB.	POUND
P.E.	PRIVATE ENTRANCE
PROJ.	PROJECT
R.	RANGE
REQ'D	REQUIRED
RT.	RIGHT
R.H.F.	RIGHT-HAND FORWARD
R/W	RIGHT OF WAY
RD.	ROAD
SHR.	SHRINKAGE
SL.	SLOPE
STD.	STANDARD
S.D.D.	STANDARD DETAIL DRAWINGS
S.T.H.	STATE TRUNK HIGHWAY
STA.	STATION
S.P.P.A.	STRUCTURAL PLATE PIPE ARCH
STRUCT.	STRUCTURE
SURF.	SURFACE
TEL.	TELEPHONE
TN.	TOWN
T.	TRUCKS (PERCENT OF)
UNCL.	UNCLASSIFIED
U.G.	UNDERGROUND
V.	VELOCITY OR DESIGN SPEED
V.C.	VERTICAL CURVE

UTILITIES

RICK PODOLAK AT&T WISCONSIN - COMMUNICATION LINE 304 S. DEWEY ST, 4TH FLOOR EAU CLAIRE, WI 54701 (715) 839-5565 (OFFICE) (715) 410-0656 (CELL) RP4514@ATT.COM	DARREN NORDSKOG XCEL ENERGY - ELECTRIC 1201 LIVINGSTONE ROAD HUDSON, WI 54016 (715) 386-4798 (OFFICE) (715) 410-3755 (MOBILE) DARREN.M.NORDSKOG@XCELENERGY.COM	ROB DOOLEY ST. CROIX ELECTRIC COOPERATIVE - ELECTRIC 1925 RIDGEWAY ST HAMMOND, WI 54015 (715) 796-7000 (OFFICE) 800-924-3407 (OFFICE) ROBDO@SCECNET.NET	RANDY RISEN MIDWEST NATURAL GAS 3600 STATE HIGHWAY 157 PO BOX 429 LA CROSSE, WI 54602 (608) 781-1101 (OFFICE) (715) 577-1941 (MOBILE) RANDYR@MIDWESTNATURALGAS.COM	BALDWIN TELECOM INC. KEN CARLSRUD 930 MAPLE STREET BALDWIN, WI 54002 (715) 684-3346 (OFFICE) (715) 760-0966 (MOBILE) KCARLSRUD@LSWI.NET
WISCONSIN DOT				
DEPARTMENT OF TRANSPORTATION NORTHWEST REGION 718 WEST CLAIREMONT AVE EAU CLAIRE WI 54701 ATTN.: TIMOTHY MASON (715) 833-5366				
MINNESOTA DOT				
DEPARTMENT OF TRANSPORTATION OAKDALE OFFICE 3485 HADLEY AVENUE NORTH OAKDALE, MN 55128-3307 ATTN.: ERIC EMBACHER (651) 366-4302				
WISCONSIN DNR - LIASON				
DEPARTMENT OF NATURAL RESOURCES WEST CENTRAL REGION 1300 WEST CLAIREMONT AVE EAU CLAIRE WI 54701 ATTN.: CHRIS WILLGER (715) 839-1609				
ST. CROIX COUNTY HIGHWAY DEPARTMENT				
ROB KREJCI, PE, HIGHWAY COMMISSIONER ST. CROIX COUNTY HIGHWAY DEPARTMENT 920 THIRD STREET PO BOX 108 HAMMOND, WI 54015 (715) 245-4200				

GENERAL NOTES

ELEVATIONS SHOWN ON THE PLAN ARE REFERENCED TO THE USC&GS DATUM.

EROSION CONTROL MEASURES SHALL BE IN PLACE PRIOR TO ANY GRUBBING OR TOPSOIL STRIPPING OPERATIONS.

NO TREES OR SHRUBS ARE TO BE REMOVED OR TRIMMED WITHOUT APPROVAL OF THE ENGINEER.

PRIOR TO TREE, SHRUB AND PLANT INSTALLATION, STAKE LOCATION AND OBTAIN ENGINEER APPROVAL ON STAKED LOCATIONS.

IT IS THE CONTRACTOR'S RESPONSIBILITY TO CALL DIGGERS HOTLINE PRIOR TO BEGINNING WORK OPERATIONS.

THE LOCATIONS OF EXISTING AND PROPOSED UTILITY INSTALLATIONS AS SHOWN ON THE PLANS ARE APPROXIMATE. THERE MAY BE OTHER UTILITY INSTALLATIONS WITHIN THE PROJECT AREA THAT ARE NOT SHOWN.

DISTURBED AREAS WITHIN THE RIGHT OF WAY, EXCEPT THE AREAS WITHIN THE FINISHED SHOULDER POINTS, SHALL BE SALVAGE TOPSOILED, FERTILIZED, SEEDED, AND MULCHED AS DIRECTED BY THE ENGINEER.

A VERTICAL SAWCUT SHALL BE MADE THROUGH EXISTING PAVEMENTS AT REMOVAL LIMITS.

REMOVAL OF GRAVEL DRIVEWAY AND APRONS SHALL BE PAID FOR AS COMMON EXCAVATION.

THE LOCATION OF DRIVEWAYS WILL BE DETERMINED BY THE ENGINEER.

WHEN THE QUANTITY OF ITEMS OF BASE AGGREGATE OR HMA PAVEMENT IS MEASURED FOR PAYMENT BY THE TON, THE DEPTH OR THICKNESS OF THE LAYER SHOWN ON THE PLANS IS APPROXIMATE. THE ACTUAL THICKNESS WILL DEPEND ON THE DISTRIBUTION OF MATERIAL AS DIRECTED BY THE ENGINEER.

4-INCH HMA PAVEMENT, INCLUDING SHOULDER PAVEMENT, SHALL BE CONSTRUCTED IN 2 LAYERS: 2.0-INCH (LOWER) AND 2-INCH (UPPER). 2-INCH AND 3-INCH HMA PAVEMENT MAY BE CONSTRUCTED IN ONE LAYER.

BACKFILL FOR THE AREA BEHIND THE CURB AND GUTTER SHALL BE INCIDENTAL.

THE EXACT NUMBER, LOCATION, AND SPACING OF ALL SIGNS ARE APPROXIMATE AND MAY BE ADJUSTED TO FIT FIELD CONDITIONS.

- ORDER OF SHEETS
SECTION NO. 2
- GENERAL NOTES, UTILITIES, ABBREVIATIONS
 - PROJECT OVERVIEW
 - EXISTING/FINISHED TYPICAL SECTIONS
 - CONSTRUCTION DETAILS
 - ELEVATION DETAILS
 - CONTOUR MAPS
 - EROSION CONTROL
 - STORM SEWER
 - EXISTING SIGN REMOVALS
 - PERMANENT SIGNING
 - ADVANCED WARNING
 - PAVEMENT MARKING
 - TRAFFIC CONTROL
 - ALIGNMENT DETAILS

DIGGERSHOTLINE

Dial 811 or (800)242-8511

www.DiggersHotline.com

STAGE 1A CONSTRUCTION OVERVIEW

-PLANT SEEDLINGS AT RIVER BRIDGE ABUTMENT AREA,
BLUFF RESTORATION IN THE SPRING OF 2018 AS DIRECTED
BY THE ENGINEER TO COMPLY WITH THE ST. CROIX
CROSSING BRIDGE ACCE PERMIT
-CONSTRUCT TEMPORARY BYPASS ROAD AT HILLTOP DRIVE
AND MAIN STREET
-CONSTRUCT MAIN TRAILHEAD AND PARKING LOT
-COMPLETE REQUIRED MODIFICATIONS TO PEDESTRIAN
UNDERPASS

OPTIONAL:

-MILL AND OVERLAY LOCAL ROADWAYS

STAGE 1B CONSTRUCTION OVERVIEW

-CONSTRUCT THE INTERSECTION OF HILLTOP DRIVE AND
HILLTOP ROAD
-CONSTRUCT THE ROAD REALIGNMENTS OF HILLTOP DRIVE
AND MAIN STREET

OPTIONAL:

-MILL AND OVERLAY LOCAL ROADWAYS

GENERAL NOTES

-DRIVEWAYS TO REMAIN ACCESSIBLE AT ALL TIMES

-WORK ON HOULTON SCHOOL CIRCLE EAST OF MAIN STREET
SHALL NOT BEGIN UNTIL AFTER MAY 23, 2018 AND MUST
BE COMPLETED BY SEPTEMBER 1, 2018. HOULTON SCHOOL
CIRCLE MAY BE CLOSED TO THRU TRAFFIC, HOWEVER,
ACCESS TO HAGGERTY STREET AND HAWK STREET SHALL
REMAIN OPEN.

-WORK AT THE MAIN TRAILHEAD THAT MUST BE COMPLETED
PRIOR TO 11:59 AM JULY 3, 2018 INCLUDES ALL WORK
NECESSARY TO OPEN THE MAIN TRAILHEAD PARKING LOT
(INCLUDING PAVEMENT MARKING), SHARED USE PATH FROM
THE PARKING LOT TO THE PEDESTRIAN UNDERPASS, SITE
GRADING AND RESTORATION, ELECTRICAL INSTALLATION,
CONCRETE PAD (INCLUDING PICNIC SHELTER CONCRETE PAD)
AND INTERPRETIVE PANEL BASE INSTALLATION, AND GRADING
AND BASE AGGREGATE DENSE INSTALLATION WITH THE MAIN
TRAILHEAD. EXCEPTION TO MAIN TRAILHEAD COMPLETION
INCLUDES FINAL ASPHALT PAVEMENT OF REMAINING TRAILS,
LANDSCAPING INSTALLATION OF TREES AND SHRUBS, AND
PICNIC SHELTER STRUCTURE. PAVING OF THE REMAINDER
OF THE TRAILS CANNOT OCCUR UNTIL THE COUNTY
CONTRACTOR HAS COMPLETED THE RESTROOM FACILITY
CONCRETE PAD AND SIDEWALK.

-SEE SDD "TRAFFIC CONTROL FOR LANE CLOSURE WITH
FLAGGING OPERATION" FOR MILL AND OVERLAY ON MAIN
STREET, STATE STREET, RAINBOW STREET AND HOULTON
SCHOOL CIRCLE.

-SEE SDD "TRAFFIC CONTROL, WORK ON SHOULDER OR
PARKING LANE, UNDIVIDED ROADWAY" FOR CONSTRUCTION OF
THE SHARED USE PATH ALONG MAIN STREET AND HOULTON
SCHOOL CIRCLE, AND THE CONSTRUCTION OF MAIN STREET
NORTH OF HILLTOP DRIVE.

FORMER STH 64 SEGMENT
CLOSED TO TRAFFIC

OLD CTH E

MAIN ST OPEN TO
LOCAL TRAFFIC ONLY

END CONSTRUCTION
STA 2045+00

RECONSTRUCT INTERSECTION

INSTALL CURB AND GUTTER

EXISTING DRIVEWAYS ALONG
MAIN STREET TO REMAIN
ACCESSIBLE AT ALL TIMES

HOULTON SCHOOL
CIRCLE CLOSED TO
TRAFFIC

CONSTRUCT TRAILHEAD
AND PARKING LOT

COMPLETE REQUIRED
MODIFICATIONS TO
PEDESTRIAN UNDERPASS

LEGEND

= WORK AREA



= DIRECTION OF TRAFFIC

N

0 500 1000
Feet

PROJECT NO: 8110-02-73

HWY: STH 35/64

COUNTY: ST. CROIX

TRAFFIC CONTROL OVERVIEW - STAGE 1

SHEET

E

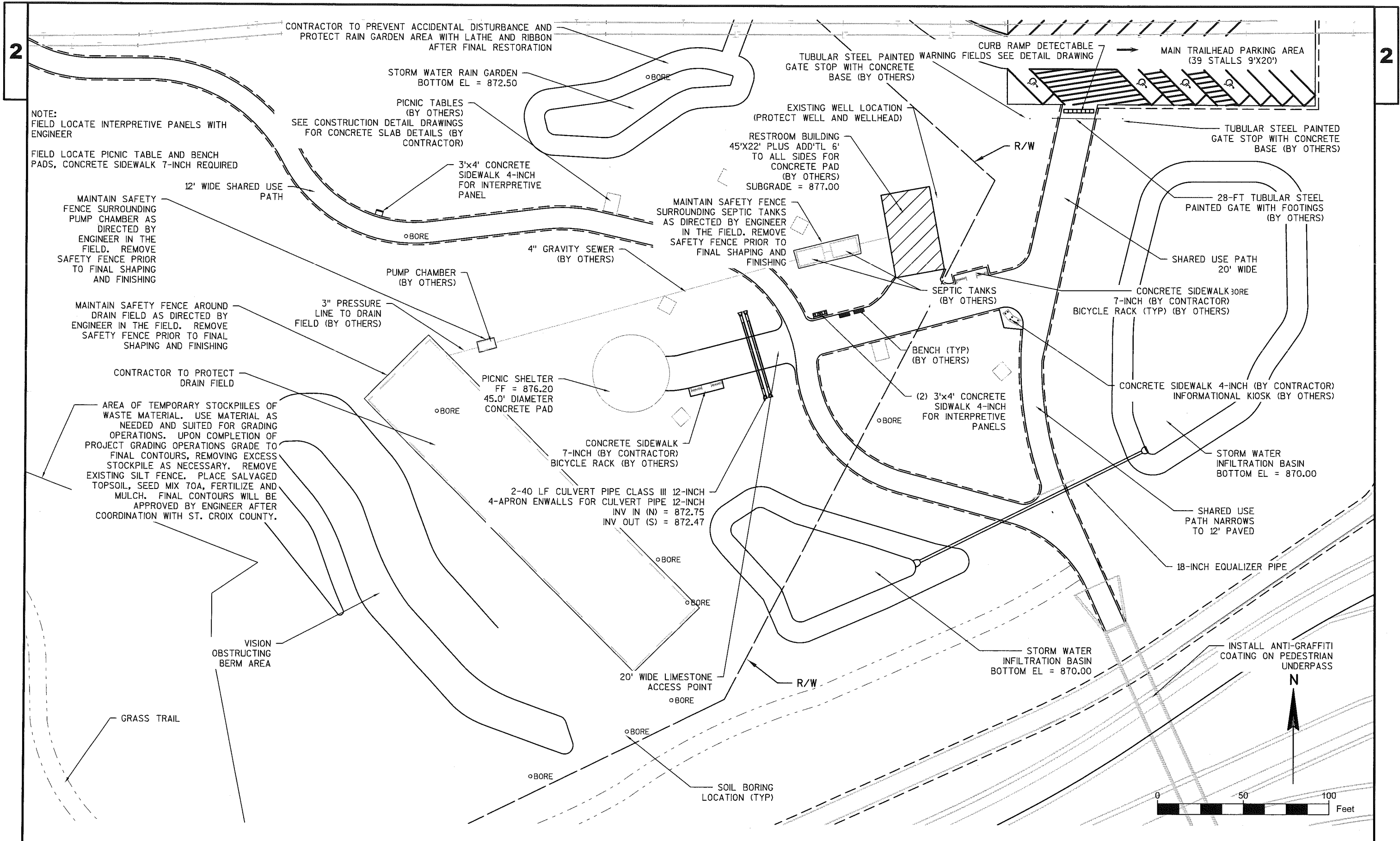
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PLOT DATE : 1/15/2018 1:09 PM

PLOT BY : DAVIS, TERESA L

PLOT NAME :

WISDOT/CADDs SHEET 42



PROJECT NO: 8110-02-73

HWY: STH 64

COUNTY: ST. CROIX

PLAN DETAILS: MAIN TRAILHEAD AREA

SHEET

E

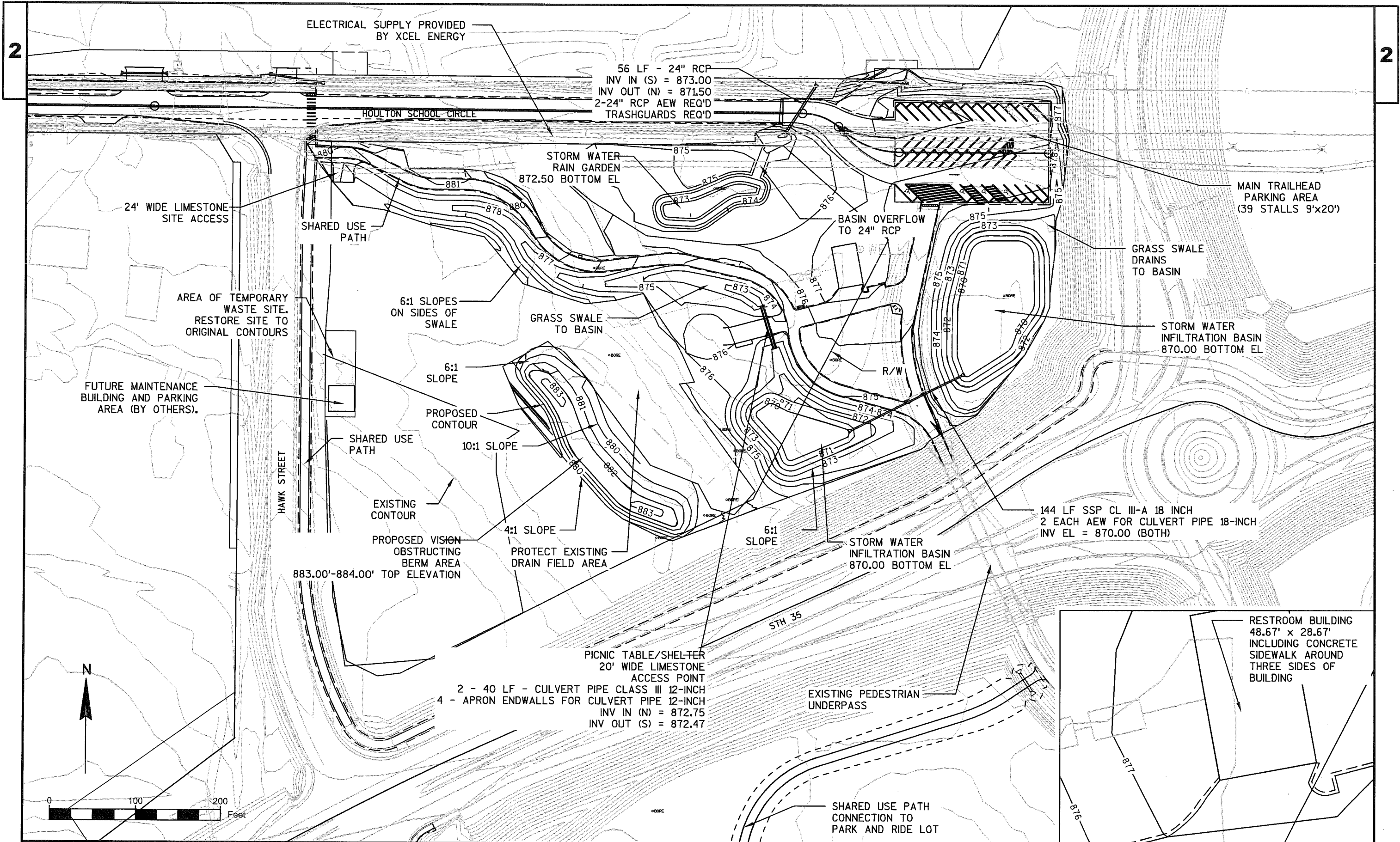
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PLOT DATE : 1/12/2018 1:37 PM

PLOT BY : DAVIST

PLOT NAME :

WISDOT/CADDs SHEET 44



PROJECT NO: 8110-02-73

HWY: STH 64

COUNTY: ST. CROIX

CONTOUR MAP: MAIN TRAILHEAD AREA

SHEET

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PLOT DATE : 1/13/2018 1:18 PM

PLOT BY : DAVIST

PLOT NAME :

WISDOT/CADD SHEET 44